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DISASTER!

EDITED BY BEN KARTMAN & LEONARD BROWN

DISASTER!



PELLEGRINI & CUDAHY

New York

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JOS. TRAUTWEIN

Introduction

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Americans are among the world's most avid newspaper readers, with a special fondness for sports pages, gossip columns and comic strips. Yet when their daily paper carries the account of a major catastrophe, they pass up their favorite features, and even news of far greater significance, until they have read every detail of the disaster and scanned the casualty lists for familiar names. It is a mistake to consider this a purely morbid interest. Instead, it is an indication that although disaster strikes repeatedly, the average American never becomes so calloused that he does not feel a swift surge of pity for the unfortunate victims. For what has happened to these people might, but for the grace of God, have happened to any of us.

Newspaper editors long ago learned that the headline which stirs the imagination and captures the sympathy of a nation is word of striking disaster. How did it happen? How many were killed, how many injured? Who was involved—the obscure or the famous, the rich on a luxury liner or the poor on a week-end excursion? When a steamer sinks in mid-ocean, when a hotel burns, when a hurricane cuts a path of destruction through cities and villages, the reader pictures himself on the liner's slanting deck; poised at a high window for the leap to almost-certain death; or fighting a hopeless battle against wind and water.

In spite of man's great technological progress, in spite of his success in flying faster than sound, in harnessing the atom, he is still virtually helpless against the elements. He can build ever-larger dams, enact costly flood-control programs, erect towering buildings of stone and steel, but

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these have given him scant protection against natural disasters. For Nature refuses to be bound by man-made laws or inventions. No amount of legislation will outlaw floods, hurricanes, earthquakes, tornadoes.

Even where legislation is feasible, man continues to make his own disasters. He has learned a great deal about preventing fires and explosions, but not enough. These continue to be a national menace, taking a frightful toll of lives and property, and this book contains more fires than any other one type of disaster. There are forest fires and ship fires, hotel fires and theater fires, factory fires and circus fires—all adding up to the fact that fire is still America's commonest, deadliest and most frightful type of disaster. Each major holocaust arouses public indignation and brings new legislation, more exacting safety requirements, more stringent inspection, but Americans continue to die horribly in an endless cycle of conflagrations.

A tragic feature of many of the disasters in this book is the fact that they need not have happened at all. A factory owner locks the exit doors during working hours, blocking escape for his employees when fire breaks out. A bus boy carelessly strikes a match to replace a light bulb, touching off a crowded night club's flimsy decorations. A lookout in a crow's nest has no binoculars to sight a treacherous iceberg, so an "unsinkable" luxury liner ends its maiden voyage at the bottom of the Atlantic. The fireman of a derailed train stumbles and breaks his only warning flare, and a crack flier plows into the wrecked cars.

There is only one bright spot, small but important, in this picture of death and destruction. Almost without exception these disasters have contributed in some way to the safety of future generations. The Triangle Waist Company holocaust resulted in a wholesale housecleaning of New York's sweatshops; the Cocoanut Grove inferno aroused civic authorities throughout the nation to the

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dangers in their own communities; the sinking of the *Titanic* in mid-Atlantic resulted in an iceberg patrol and stricter lifeboat requirements; the wave of train wrecks in 1943 emphasized the railroads' need for more widespread use of two-way radio communication.

This book contains no disasters resulting directly from war, the greatest of all disasters. No, these are the catastrophes that can happen any time, anywhere, without the help of the great god Mars. This book, too, concerns itself only with outstanding American disasters. The one exception is the sinking of the *Titanic*, a White Star liner, but by the helpful process of rationalization we have included it because: 1) a large percentage of its passengers were Americans, several hundred of whom went down with the ship; 2) New York was Journey's End for those fortunate enough to be rescued; 3) Jack Lawrence's graphic reporting was too good to omit.

No single volume of American disasters could be all-inclusive, and this one does not pretend to be. It is, however, representative of the types of catastrophe which strike without warning and, too often, without reason. For the sake of continuity and to illustrate the changing pattern of American disasters through the years, the articles have been arranged in chronological order.

We have assembled those accounts of major catastrophes which tell their stories in terms of people—their sufferings, their heroism, their miraculous escapes—rather than through statistics; for figures are cold, impersonal things where human lives are concerned. Every disaster has had its heroes, often men and women whose lives were otherwise drab and commonplace, for heroism often springs up from surprising sources.

To supplement the detailed accounts of the more dramatic, more important or more far-reaching catastrophes, we have included a list of other American disasters with a brief summary of the essential facts about each. It is our

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hope that this list will have practical, lasting value for reference purposes.

Finally, my collaborator and I would be singularly ungrateful if we failed to express our thanks to the authors and publishers whose generous cooperation made this book possible. If we have produced a volume which you, the reader, will find informative, useful and, above all, interesting, the credit is as much theirs as ours.

—BEN KARTMAN

Chicago
June 10, 1948

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DISASTER!

Year of the Great Quakes

By Vincent H. Gaddis

OHIO-MISSISSIPPI VALLEYS, December 16, 1811
—It was in March, 1811, that the Great Comet came. Considered by the Russians to have presaged Napoleon's historic invasion of their country, it flamed in the skies over the southern United States, so soon to be rocked and shaken by America's worst earthquake.

Stirred by some mysterious impulse, a horde of squirrels had pressed south from Indiana a few weeks previously. They poured into the Ohio River, swimming, clinging to drifting bits of wood. Thousands of lifeless bodies drifted downstream, mute warning of the terror to come.

Below the Mississippi basin, weighted by millions of tons of river silt that had accumulated for millenniums, lay the fault in the earth's crust, now strained to the breaking point. There had been slight previous stirrings—minor shocks in 1776, 1791 and 1795. And throughout the world other faults were active. In September, Charleston, South Carolina, was shaken; in October, quakes had occurred in Austria, England and the Philippines.

In November the rains came. Day after day water fell from leaden skies, and damp misery gripped the flooded Ohio and Mississippi valleys. In scattered cabins the pioneer farmers passed the time as best they could, waiting, waiting. But the rain continued to fall, the floodwaters rose higher.

Then, at two o'clock on the morning of December 16,

the earth moved. Settlers were awakened by an ominous rumbling that slowly grew in intensity. They hurried from their cabins into the night. A weird glow lit the sky as the ground swayed under their running feet. Dazed and bewildered, they huddled beneath trees as objects around them danced and groaned with a sudden life born of chaos.

Through the long night and the light of dawn, shock succeeded shock as the earth buckled and rocked. Centering around New Madrid, Missouri, the quakes were felt over a region of 301,656 square miles. A district of 30,000 square miles sank from five to twenty-five feet, while other areas were raised in similar degree.

Reelfoot Lake in Tennessee, eighteen miles long, was created. At several points the Mississippi River flowed backward, changing its course for hundreds of miles. Huge waves sank dozens of boats and smashed others on the banks.

Rising and falling in sickening waves, the earth's surface split into fissures, some a half mile long, and sulphurous gases poured out. Trees were bent until their branches interlocked into a leafy ceiling. Landslides swept furiously down bluffs and river banks, the entire cemetery at New Madrid being carried away into the river.

Several hundred lakes and islands were formed on a 300-mile front from the mouth of the Ohio to the St. Francis River. As the convulsions continued, some of these lakes, miles in extent, were formed or drained in less than an hour. Thousands of trees choked the river currents.

"When the tremors were felt," an eyewitness reported, "houses crumbled, trees waved together and the ground sank." Undulations "increased in elevation as they advanced, and when they had attained a certain fearful height the earth would burst, and vast volumes of water and sand and pitcoal were discharged, as high as the tops of the trees, leaving large chasms where the ground had opened."

From a scientific standpoint the shock of December 16,

1811, was the worst in American history and one of the greatest on record. Only the fact that the district affected was thinly settled and that most of the houses were log cabins—structures well adapted to resist quakes—prevented a tremendous loss of life and property. Nevertheless, an unestimated number of persons perished. Some were swallowed up in the vast crevices that split the rocking surface, many were drowned, and several “died from fright.”

The settlers, noticing that the earth chasms were running southwest and northeast, cut down tall trees and dropped them at right angles to the direction of the chasms. When the warning rumbling of another shock was heard, they climbed on these trees and many lives were saved.

The quakes were accompanied by rumbling sounds “succeeded by discharges as if a thousand pieces of artillery were fired,” and by vast dark clouds of dust and vapor. Sulphurous odors saturated the atmosphere and impregnated the water for hundreds of miles around the New Madrid area, making it unfit to drink. An abnormal warmth and smokiness was observed at Jeffersonville, Indiana, for several days after the shock, and at Columbia, South Carolina, the air was affected by obnoxious vapors for some time.

Flashes of light and “glows” were reported from several points in the shaken area. Some of these flashes were observed in Missouri, Kentucky, Tennessee, North Carolina and Georgia. Residents of Livingston County, Missouri, noticed a “luminous atmosphere” in which objects were visible for some distance at night.

In the wake of the shocks came privation and suffering. Practically all livestock had been killed and food destroyed in the New Madrid area. Indian-style camps were erected, and provisions were obtained from the wreckage of several flatboats, New Orleans bound, that had been driven into the bayou near the village.

The land had been ruined, delaying the development of eastern Missouri for fifty years. It was a country of chasms and splintered trees. Vast regions were covered with white sand. One by one, discouraged inhabitants drifted away to make new homes for themselves farther west.

Then, slowly, the region became normal again. Floodwaters and rain beat the sand back into the earth or carried it away. The chasms filled and fallen trees were destroyed. From the east came new residents to clear the farmlands. Constant shifting of the river channel, however, forced the moving of New Madrid four times before the Civil War. But despite the tricks of the temperamental Mississippi, despite intermittent floods, New Madrid and its neighboring towns stand today.

No one can estimate the loss of life and property that would result if shocks as great as those of 1811 were to convulse the earth today. Man, in his study of the atom, now probes close to the very core of the universe. Yet he stands helpless before the titanic vagaries of Nature as the earth's surface constantly shrinks, grows and undergoes tremendous changes.

Cholera in New Orleans

By The Rev. Theodore Clapp

NEW ORLEANS, LA., October, 1832.—In the excessively warm summer of 1832, my strength was so much reduced that a change of climate was prescribed by friends and physicians. With my family, therefore, I left New Orleans in a steamboat, intending to spend the remainder of the season at Niagara, Montreal and Saratoga Springs. But when I reached Ohio, cholera had made its appearance in Quebec and other places, and was traveling rapidly. In one short month it spread from the capital of lower Canada westward to Detroit, and to Lake Champlain, Albany and New York.

Fearing that New Orleans might be stricken during my absence, I abandoned my journey and retraced my course downriver. I could not rid myself of the presentiment that a great calamity impended for the Crescent City. The previous summer, in August, a frightful tornado had swept over New Orleans, and the Creoles said this was the forerunner of pestilence. I proposed to leave Mrs. Clapp and the children with her aunt in Kentucky, but she insisted on returning with me.

When we arrived in New Orleans, on September 1, the weather was sultry and oppressive. That very week, several cases of yellow fever occurred in the Charity Hospital and in boarding houses along the levee. It soon grew into

Excerpted from the book Autobiographical Sketches and Recollections During a Thirty-Five Years' Residence in New Orleans by the Rev. Theodore Clapp, Boston, 1857.

an epidemic, and carried off hundreds during September and October.

On the morning of October 25, 1832, as I was walking home from market, I saw two men lying on the levee in a dying condition. They had been landed from a steamboat the night before. Some of the watchmen had gone after a handbarrow on which the men might be removed to the hospital. A large crowd had assembled, but when a physician rode up in his gig and exclaimed in a loud voice, "Those men have the Asiatic cholera," the crowd ran for their lives.

I was left almost alone with the sufferers, who could speak and were in full possession of their reason. They had what I afterwards found were the usual symptoms of cholera—cramps, convulsions, etc. Their hands and feet were cold and blue; an icy perspiration flowed in streams; and they complained of a great pressure upon their chests. Their thirst was intense, and they begged for water. I tried to board the steamboat which had put the men ashore, but the staging had been drawn in to prevent all contact with people on the levee.

At that instant the watchmen arrived with a dray. Happily (because, perhaps, they spoke only French) they had no suspicion that the strangers were suffering from cholera. If I had pronounced that word in their hearing, they too might have fled, leaving the sick men to perish on the cold ground. I saw them placed on the vehicle, and subsequently learned that they were dead before noon.

I walked home, attempting to be calm and resigned, determined to do my duty and leave the consequence with God. I said nothing to my family about the sick men I had seen, though they thought it strange that I had taken so long in going to and from the market, and observed that I seemed uncommonly thoughtful and serious. But I felt that the hour of peril had come. I said a silent prayer.

The weather that morning was very peculiar. The heavens were covered with thick, heavy, damp, lowering

clouds that seemed like one black ceiling spread over the whole horizon. To the eye it almost touched the tops of the houses. Not a breath of wind stirred. It was so dark that in some of the banks, offices and private houses candles or lamps were lighted. Everyone felt a strange difficulty in breathing.

After breakfast I walked down to the post office. At every corner, and around the principal hotels, were groups of anxious faces. As soon as the people saw me, the question was put by several of them at a time: "Is it true that cholera is in the city?" I replied by describing what I had seen only two hours before. Observing that many of them appeared panic struck, I remarked, "Gentlemen, do not be alarmed. These may prove to be what the doctors call sporadic cases."

That day as many people left the city as could find means of transportation. On my way home from the post office, I walked along the levee where the two cholera victims had been disembarked. Several families in the neighborhood were preparing to move, but in vain. They could not find vehicles. The same afternoon, the pestilence entered their houses, and before dark it had spread through several squares opposite the point where the steamer had landed the first cases.

By evening of October 27, cholera had made its way through every part of the city. In the next ten days, physicians estimated that, at the lowest computation, there were 5,000 deaths—an average of 500 a day. And many more died of whom no account was rendered. Bodies in great number, weighted down with bricks and stones, were thrown into the river. Many were privately interred in gardens and enclosures on the grounds where they had died; their names were not included in the mortality lists. Often I was kept in the burying ground for hours at a time by the endless arrival of corpses over whom I was requested to perform a short service.

One day I did not leave the cemetery until 9:00 P.M.;

the last burials were by candlelight. Arriving home faint, exhausted, horror-stricken, I found my family sobbing and weeping, for they had concluded from my long absence that I was dead.

After bathing and eating, I started out again to visit the sick. My door was thronged with people waiting to conduct me to the dying sufferers. In this kind of labor I spent most of the night. At 3:00 A.M. I returned home and threw myself on a sofa, with directions that I was not to be called before 5:30. I was to officiate at a funeral at 6:00 A.M.

One morning when I arrived at the graveyard I found a large pile of corpses without coffins, laid in horizontal layers, one above the other, like corded wood. I was told that there were more than 100 bodies in that ghastly pile. They had been brought there by unknown persons since nine o'clock the night before. Large trenches were dug, and into them these uncoffined corpses were thrown. The same day, a private hospital was found deserted; physicians, nurses and attendants were all dead or had run away. The wards were filled with putrid bodies which, by order of the mayor, were piled in an adjacent yard and burned.

Many persons, even of fortune and renown, died in their beds without aid, unnoticed and unknown, and lay unburied for days. In almost every house the sick, the dying and the dead lay in the same room. All stores, banks and places of business were closed. There were no means for carrying on business, since all the drays, carts, carriages and wheelbarrows, as well as hearses, were kept busy transporting corpses. Words cannot describe my sensations when I first beheld the awful sight of carts driven to the graveyard and there upturned, their contents discharged like so many loads of lumber or offal.

The Sabbath came, and I ordered the sexton to ring the bell for church at 11:00 A.M., as usual. I did not expect half a dozen persons, but there was actually a congregation

of two or three hundred, all men. The women were too busy caring for the sick to come to church.

For several days after this Sabbath, the plague raged with unabated violence. A fatal yellow fever had been spreading destruction in the city six weeks before the cholera commenced, and thousands had left to escape this scourge. At the time of the first cholera outbreak, therefore, it was estimated that the population of the city did not exceed 35,000. During the entire epidemic, at least 6,000 persons perished—one-sixth of the population in twelve days! This is the most appalling ratio of mortality recorded in any part of the world, ancient or modern. The same epidemic broke out again the following summer—in June, 1833. In September of that year, the yellow fever came back again. So, within the space of twelve months, New Orleans had two visitations of Asiatic cholera and two yellow-fever epidemics, carrying off 10,000 persons, according to official figures, and many more that were not reported.

Multitudes began the day in apparently good health, and were dead before sunset. One morning as I was going out, I spoke to a gentleman who lived in the house next to mine. He remarked that he felt very well. "But I wonder," he added, "that you are still alive." On my return two hours later, he was a corpse. A baker died in his cart directly before my door. Near me a brick house was going up; two of the workmen died on a carpenter's bench shortly after they had started work for the day.

One family of nine supped together in perfect health. Twenty-four hours later, eight of them were dead. A boarding house that contained thirteen inmates was emptied by death; not one was left to mourn.

Nature seemed to sympathize in this dreadful spectacle of human woe. A thick, dark atmosphere still hung over us like a mighty funeral shroud. All was still. Neither sun nor moon nor stars shed their blessed light. Not a breath of air moved. A hunter who lived on the Bayou St. John

assured me that during the cholera he killed no game. Not a bird was seen winging the sky. Artificial causes of terror were added to the gloom which covered the heavens. The burning of tar and pitch at every corner; the firing of cannon, by order of the city authorities, along all the streets; and the frequent fires which occurred at that dreadful period—all conspired to add horror to the scene.

Often, walking my nightly rounds, flames from the burning tar so lighted the city streets and river that I could see almost as distinctly as in daylight. And through many a window lighted by these fires I could see persons struggling in death, and rigid, blackened corpses awaiting the arrival of a cart or hearse to carry them away.

During these inconceivable horrors I managed to maintain my post for fourteen days, without a moment's serious illness. I often sank down upon the floor, sofa or pavement, faint and exhausted from overexertion, sleeplessness and hunger; but a short nap would partially restore me and send me out afresh to renew my perilous labors. I expected that every day would be my last, yet I did not have the slightest symptom of cholera.

In June, 1833, the disease first invaded our own family circle. Two of my daughters, the eldest four years old, the youngest two, died about the same time. I was fortunate enough to procure a carriage, in which their bodies were conveyed to a family vault in the Girod cemetery. I rode in the carriage alone with the two coffins. There was no one else present to aid in performing the last sad offices.

Mountain Ordeal

By Virginia Reed Murphy

I was a child when we started to California, yet I remember the journey well—and with good cause—as our little band of emigrants who drove out of Springfield, Illinois, that spring morning of 1846 has gone down in history as “the ill-fated Donner party.” Actually, my father, James F. Reed, was the originator of the party. The Donner brothers, George and Jacob, who lived just outside Springfield, decided to join him.

Nothing like our family wagon ever started across the plains. It was a two-story “pioneer palace car,” attached to a regular emigrant train. Grandma Keyes, who at seventy-five was a bedridden invalid, insisted on going along rather than be parted from my mother, her only daughter. So the car in which she was to ride was planned for comfort. The entrance was on the side, like that of an old-fashioned stagecoach, and through it one stepped into a small room in the center of the wagon. At the right and left were spring seats with comfortable high backs. In this little room was placed a tiny sheet-iron stove whose pipe ran through the top of the wagon. A board about a foot wide extended over the wheels on either side the full length of the wagon, forming the foundation for a roomy second story in which our beds were placed.

We also had two wagons loaded with provisions enough to last us through the first winter in California, had we made the journey in the usual time of six months. Yet

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when we reached California after fearful hardships, we were almost destitute.

I shall never forget the morning we bade farewell to kindred and friends. The Donners were there, having driven in the evening before with their families so that we might get an early start. Grandma Keyes was carried out of the house and placed in the wagon on a large feather bed, propped up with pillows. Father had tears in his eyes, but he tried to smile as friends grasped his hand in farewell. Mama was overcome with grief. At last we were all in the wagons, the drivers cracked their whips and the long journey began.

That was the morning of April 14, 1846. Our party numbered thirty-one and consisted chiefly of three families, the other members being young men, some of whom came as drivers. The Donners included George and Tamsen Donner and their five children, and Jacob and Elizabeth Donner and their seven children.

Nothing of great interest happened until we reached what is now Kansas. The first Indians we met were the Caws, who kept the ferry and took us over the Caw River. I watched them closely, hardly daring to breathe, sure they would sink the boat in the middle of the stream.

Grandma Keyes improved in health and spirits every day until we came to the Big Blue River, which was so swollen that we had to make rafts on which to take the wagons over. As soon as we stopped traveling, Grandma began to fail, and on May 29 she died. It seemed hard to bury her in the wilderness and travel on, but as things turned out, her death here was providential.

Finally the dangerous work of crossing the river was accomplished and we resumed our journey. The going at first was rough, but after striking the great valley of the Platte the road was good and the country beautiful. Traveling up the smooth valley, we made from fifteen to twenty miles a day. At night when we drove into camp, our wagons were placed so as to form a circle or corral,

into which our cattle were driven after grazing, to prevent the Indians from stealing them. The campfires and tents were on the outside. There were many expert riflemen in the party and we never lacked for game, as the plains were alive with buffalo.

At Fort Laramie, 200 miles farther on, we celebrated the Fourth of July in fine style. Camp was pitched earlier than usual and we prepared a grand dinner. On July 6 we were again on the march. A new route had just been opened by Lansford W. Hastings. Called the "Hastings Cutoff," it passed along the southern shore of the Great Salt Lake, rejoining the old Fort Hall Emigrant road on the Humboldt. It was said to shorten the distance 300 miles. We were assured by Hastings that the only bad part of the route was the forty-mile drive through the desert by the shore of the lake.

The greater part of the company elected to go by the old road. They reached California safely. But eighty-seven persons took the "Hastings Cutoff"—the Donners, Breens, Reeds, Murphys, C. T. Stanton, John Denton, William McClutchen, William Eddy and Louis Keseburg among them. These were the unfortunates who have since become known as the Donner Party.

On the morning of July 31 we set off in high spirits on the "Hastings Cutoff"; but a few days showed us that the road was not as it had been represented. We were seven days in reaching Weber Cañon. Hastings, who was guiding a party in advance of our train, left a note by the wayside warning us that the road through the cañon was impassable and advising us to select a road over the mountains, the outline of which he attempted to give on paper. But the directions were so vague that C. T. Stanton, William Pike and my father rode on in advance, overtook Hastings and tried to induce him to return and guide our party. He refused, but came back over a portion of the road and from a high mountain tried to point out the general course.

Over this road Father traveled alone, taking notes and blazing trees to assist him in retracing his course.

Learning of the hardships of the advance train, our party decided to cross towards the lake. But there was no road, not even a trail. Heavy underbrush had to be cut away and used for making a roadbed. Finally we reached the end of the cañon. It seemed impossible for the oxen to pull the wagons up the steep hill and the bluffs beyond, but we doubled teams and the work was at last accomplished.

Worn with travel, we finally reached the shore of the Great Salt Lake. It had taken an entire month, instead of a week, and our cattle were not fit to cross the desert.

We were now encamped in a valley called Twenty Wells. For the long drive across the desert we laid in, as we supposed, an ample supply of water and grass. But the desert, represented to us as only forty miles wide, was nearer eighty—a dreary, desolate, alkali waste. Starting in the evening, we traveled all that night and the following day and night—suffering from thirst and heat by day and from the piercing cold by night.

When the third night fell and we saw the barren waste still stretching away before us, Father went ahead in search of water. But before starting he instructed the drivers that if the cattle showed signs of giving out, to take them from the wagons and follow him. Soon the oxen began to fall to the ground from thirst and exhaustion. They were unhitched at once and driven ahead. Father, coming back, met the drivers and cattle within ten miles of water and instructed them to return as soon as the animals had satisfied their thirst.

We waited all the next day for the return of our drivers, the other wagons being already out of sight. Toward night, we had only a few drops of water left. Another night there meant certain death, so we set out on foot in an effort to reach our wagons.

After dragging ourselves along about ten miles, we

reached the wagon of Jacob Donner. The family were all asleep, so we lay down on the ground although a bitter wind swept over the desert, chilling us through and through.

At daylight Father left to learn the fate of his cattle, and was told that all but one cow and an ox were lost. Scenting water, the animals had rushed on ahead of the men and disappeared.

We were now 800 miles from California, seemingly stranded in the desert. The company let us have two yoke of oxen, so with our ox and cow yoked together we could save one of our wagons. Our provisions were divided among the company. Before leaving the desert camp, an inventory of our provisions revealed that the supply was not sufficient to last us through to California. Then, as if to render the situation even more terrible, a storm broke during the night and the hilltops became white with snow. Someone must go on to Sutter's Fort for provisions, and Stanton and McClutchen bravely volunteered. The rest of us resumed our journey and soon reached Gravelly Ford on the Humboldt. There we were compelled to double our teams in order to ascend a steep, sandy hill.

Milton Elliott, who was driving our wagon, and John Snyder, who was driving one of Mr. Graves', quarreled over the management of their oxen. Snyder was beating his cattle over the head with the butt end of his whip when Father, returning from a hunting trip, arrived and remonstrated with him.

Springing upon the tongue of a wagon, Snyder struck Father blow after blow with his heavy whipstock. Father was stunned and blinded by blood streaming from his head. Another blow was descending when Mother ran in between the men. Seeing the uplifted whip, Father had time only to cry: "John, John," when down came the stroke upon Mother.

In an instant Father's hunting knife was out and Snyder fell. He was caught in the arms of W. C. Graves, carried

up the hillside and laid on the ground. In a few moments he was dead.

A council was held to decide Father's fate, while we anxiously awaited the verdict. Refusing to accept his plea of self-defense, they decided that he should be banished from the company. Thus, Father was sent alone into an unknown country without provisions or arms—even his horse was at first denied him. But I followed him through the darkness to give him his rifle, pistols, ammunition and some food.

We traveled on, but all life seemed to have left the party. Every day we searched for some sign of Father, who would leave a letter by the wayside in the top of a bush or in a split stick. When he succeeded in killing geese or birds, he would scatter the feathers about as a sign that he was not suffering for lack of food. But a time came when we found no trace of him. Had he starved—or perhaps been murdered by Indians?

It was apparent that our whole company would soon be put on a short food allowance, and the snow-capped mountains gave an ominous hint of the fate that really befell us later. Our wagon was found to be too heavy, so we abandoned everything we could spare and packed the remaining things in part of another wagon. We had two horses left, and they managed to carry my two little brothers. The rest of us had to walk.

On October 19, while traveling along the Truckee, Stanton returned with seven mules loaded with provisions. McClutchen was too ill to travel, but Captain Sutter had sent two Indian vaqueros, Louis and Salvador, with Stanton. Hungry as we were, Stanton brought us something even better than food—news that Father was alive. He had met him not far from Sutter's Fort.

We now packed what little supplies we had left on one mule and started with Stanton. My mother rode another mule, carrying Tommy in her lap; Patty and Jim rode behind the two Indians, and I behind Stanton. Thus we

journeyed on, looking fearfully towards the mountains, where snow was already falling. Winter had set in a month earlier than usual.

All trails and roads were covered; and our only guide was the summit, which it seemed we would never reach. Despair drove many nearly frantic. When the wagons could not be dragged through the snow, their goods and provisions were packed on oxen and another start was made, men and women walking in snow up to their waists, carrying children and trying to drive their cattle. The Indians said they could find no road, so a halt was called and Stanton went ahead with the guides. He came back to report that we could get across if we kept right on, but that it would be impossible if more snow fell. He favored a forced march until the other side of the summit was reached, but many were too exhausted to take another step; so we camped within three miles of the summit.

That night the dreaded snow came, great feathery flakes whirling down around the campfires. By morning it lay deep on mountain and valley. We built cabins and prepared as best we could for winter. That camp, which proved the camp of death to many, was made on the shore of what is now known as Donner Lake. The Donners, camped in Alder Creek Valley below, were, if possible, in worse condition than ourselves. The snow came on so suddenly that they barely had time to put up brush sheds covered with pine boughs.

Many attempts were made to cross the mountains, but all proved futile because of the pitiless storms. Finally a party was organized, since known as the "Forlorn Hope." They made snowshoes, and fifteen started—ten men and five women—but only seven lived to reach California. Eight men perished, among them the brave Stanton.

The misery we endured during those four months at Donner Lake in our little dark cabins is impossible to describe. The storms would often last ten days, and from the inside we would cut chips from the logs which formed

our cabins, in order to start a fire. Some mornings snow would have to be shoveled out of the fireplace.

Time dragged slowly along till we were no longer on short rations—we were starving. Mother could not see her children die without trying to get them food, so she decided to try crossing the mountains, leaving the younger children behind. With no guide but a compass we started—Mother, Milt Elliott and myself. Milt wore snowshoes and we followed in his tracks, climbing one high mountain after another, only to see others still higher ahead.

One morning we awoke to find ourselves in a well of snow. During the night, the heat of the fire had melted the snow and our little camp had sunk many feet below the surface. We knew that any attempt to get out might bring an avalanche down upon us, but we finally reached the surface. Because my foot was badly frozen, we were compelled to return, and just in time, for that night a storm came on—the most fearful of the winter—and we would surely have died had we not been in the cabins.

We now had nothing to eat but the raw hides on the roof of the cabin; boiled, they were simply a pot of glue. When the hides were taken off the roof, leaving us without shelter, Mr. Breen took us into his cabin and Mrs. Breen slipped me bits of meat now and then when she discovered that I could not eat the hide. Death had already claimed many in our party and it seemed as if relief would never reach us. We did not know, of course, that on his arrival at Sutter's Fort, Father had described our predicament and asked for help. Sutter furnished horses and provisions, and Father and Mr. McClutchen started for the mountains. They came as far as they could on horseback, then proceeded on foot with packs on their backs. But they were finally forced back.

Captain Sutter advised Father to go to Yerba Buena, now San Francisco, and see the naval officer in command. Father was in fact conducting parties there when the seven members of the Forlorn Hope arrived from across

the mountains. Their famished faces told the whole horrible story. Cattle were killed and men were up all night drying beef and making flour; then a party of seven were sent to our rescue.

On February 19, 1847, they reached our cabins, where all were starving. There was joy at Donner Lake that night, for we did not know the fate of the Forlorn Hope and we were told that relief parties would come and go until all were across the mountains. But sorrow was strangely blended with the joy, for the dead lay about on the snow, unburied, since the living lacked strength to bury their dead.

On February 22 the first relief party started across the mountains with a party of twenty-three men, women and children. Mother and her family were among them. It was a bright sunny morning and we felt happy, but we had not gone far when Patty and Tommy gave out. It was not thought safe to let them go on, so Mama was told that they would have to be sent back to await the next expedition. Mother protested that we would all go back together, but the relief party would not permit it. Instead, Mr. Glover promised that he himself would return for the children.

It was a sad parting—a fearful struggle. Patty said, "I will take good care of Tommy and I do not want you to come back." Mr. Glover led the children back and left them with the Breens.

Sorrowfully we traveled on, walking in single file. The men wearing snowshoes broke the way, and we followed in their tracks. At night we lay down on the snow to sleep, and when we awoke our clothing was frozen. At break of day we were again on the road: we could make better time over the frozen snow. The sunshine only added to our misery, melting our frozen clothes until they clung to our bodies.

Once more we faced starvation when we discovered that a cache of food which the rescue party had hung in a tree

had been destroyed by wild animals. But Father, who was hurrying over the mountains toward us with food, met us just in time.

When he learned that two of his children were still at the cabins, he rushed on in a frantic effort to reach them before they starved. He seemed to fly over the snow, reaching Donner Lake on March 1. He was overjoyed to find Patty and Tommy alive, but what a sight met his gaze! The famished little children and the deathlike look of all made his heart ache. He filled Patty's apron with biscuits, which she carried around, giving one to each person. He made soup for the infirm, and rendered all assistance possible to the sufferers. Leaving them with about seven days' provisions he started out with a party of seventeen, all that were able to travel. Three of his men remained at the cabins to gather wood and care for the helpless.

Father's party had not traveled far when a storm broke upon them. With the snow came a veritable hurricane. The crying of half-frozen children, the lamenting of the mothers, and the suffering of the whole party was heart-rending. All night Father and his men worked through the raging storm; trying to erect shelter for the dying women and children.

The relief party had cached provisions on their way to the cabins, and Father had sent three of the men ahead for food before the storm set in; but they could not return. Thus, again, all faced death. Three days and nights they were exposed to the fury of the elements. Finally Father became snow-blind, and he would have died but for William McClutchen and Hiram Miller, who worked over him all night.

The storm ended at last and McClutchen and Miller set out over the snow in an effort to get help for those who could not travel. Miller picked up Tommy and started. Patty thought she could walk, but soon she fell, exhausted. Everything else was now forgotten in a frantic attempt to revive the dying child. Father found some crumbs in the

thumb of his woolen mitten; warming and moistening them between his own lips, he gave them to Patty and thus saved her life.

There was untold suffering at that "Starved Camp," as the place has since been called. When Father reached Woodworth's Camp, a third relief started in at once and rescued the living. A fourth relief went on to Donner Lake, as many were still there—and many remain there still, including George Donner and his wife, Jacob Donner, his wife, and four of their children. George Donner had met with an accident and was unable to travel; his wife chose to die with him rather than leave him to die alone.

Most of the survivors, when brought in from the mountains, were taken to Sutter's Fort, where the generous-hearted captain did everything possible for them. Of the eighty-three persons who were snowed in at Donner Lake, forty-two had died, and of the thirty-one emigrants who left Springfield, Illinois, that spring morning, only eighteen lived to reach California.

EDITORS' NOTE: *One of the ugliest features of the Donner Party's ordeal—a feature which Mrs. Murphy does not touch on—was the cannibalism to which some of the party resorted in an effort to stay alive. Some historians maintain that certain unfortunates in the group were slain and devoured; others, that only those who died of starvation or exposure were eaten. But they are agreed that, toward the end of the expedition, cannibalism did break out in the Donner Party.*

Perils of the Deep

By Milo M. Quaipe

LAKE MICHIGAN—Among the most distressing tragedies ever enacted on Lake Michigan were the destruction of the *Phoenix* by fire in 1847 and the *Lady Elgin* by collision in 1860.

The *Phoenix*, built in 1845, was a propeller of 302 tons which plied between Buffalo and Chicago. On November 11, 1847, she began her westward run, heavily laden with merchandise consigned to Chicago and with a capacity load of passengers, almost all of them immigrants from Holland preparing to join relatives and friends who had already found homes in Michigan or other states of the Middle West.

The route of the *Phoenix*, like that of most other ships, ran down the Wisconsin shore of Lake Michigan, since there were no important towns on the eastern coast. Leaving Manitowoc in stormy weather after midnight of November 21, the vessel strained under her load and the firemen fed her boilers furiously. About four o'clock in the morning, smoke began pouring from the engine room and the alarm of fire was given. Although a bucket brigade was formed, it soon became apparent that efforts to subdue the fire were vain and the vessel's two small lifeboats were launched with forty-three passengers and crew, all of whom reached shore safely.

Left behind on the doomed *Phoenix* were some 200

From Lake Michigan by Milo M. Quaipe, copyright 1944. Used by special permission of the publishers, The Bobbs-Merrill Company.

souls, most of them the Dutch immigrants who were hopefully nearing the end of their 4,000-mile pilgrimage. Two hours passed while the fire continued to rage, and they desperately awaited the return of the lifeboats or the arrival of other rescuers.

They came, but too late. Many of the passengers had sought refuge from the fire and smoke by retreating to the rigging, where they perished one by one as the flames mounted the tarred ropes and fired the sails. Others leaped into the lake, to sink at once in the icy water or to cling precariously to pieces of floating wreckage from which they eventually slipped to their watery graves; some remained on their floats and perished from the cold.

Meanwhile at near-by Sheboygan the alarm had been given and the work of rescue was set in motion. The lifeboat of the schooner *Liberty* was manned and started for the scene, followed by many small boats launched by civilians, while the propeller *Delaware*, which chanced to be in the harbor, began raising steam to join in the work. As it turned out, she arrived first, about seven o'clock, to find but three persons—all men—still alive. Two hundred had perished in the flames or in the icy water.

Amid the murky hell of the burning *Phoenix* looms forever the heroic figure of David Blish, a Southport merchant. Only thirty-three and the father of four small children, he had every reason to wish to live, yet he cheerfully gave his life to ease the agony of a crowd of alien immigrants. Offered a place in one of the lifeboats, he declined, preferring "to take my chances with the rest," and while the boats were being loaded he stood at the gangplank to prevent them from swamping.

During the voyage he had made friends with the Hollanders, paying particular attention to the children, and in their last agony he did not fail them. When the fire was far advanced he took in his arms a lost and terror-stricken little girl, shielding her body from the flames with his own.

So he moved through the inferno, a veritable angel of mercy; at the end he contrived to launch a little raft and with two children still in his arms clung to it until overcome by the cold.

Fortunately for those who found places in the lifeboats, the lake was now calm after the storm which had prevailed. Although an effort had been made not to swamp the boats, they were loaded to capacity, and some who had plunged into the water endeavored to cling to them. One woman thus held on all the way to shore. Another passenger, a girl who had got her hands on one of the boats, was forcibly thrust off and sent to her death by those inside. In such an extremity, necessity knows no other law. The second boat was launched with only one oar and had to be sculled all the way to shore. It dipped a good deal of water and the Hollanders baled this out with their wooden shoes.

Although there was no wholesale absence of discipline on the part of the crew, only three of whom manned each of the lifeboats, it is significant of the changing standards of the sea which have since come about that among them were the captain and the first mate of the *Phoenix*. Today such officers remain with their ship, while "women and children first" is the universal rule.

In the case of the *Lady Elgin*, which met with disaster on the night of September 7-8, 1860, its dramatic end was brought about indirectly by the dispute between North and South over the issue of Negro slavery.

In the prevailing fashion of the time, Milwaukee's Irish ward, appropriately known as the "Bloody Third," had a military company called the Union Guards. All Wisconsin had been shaken to its depths by the controversy over the Glover slave rescue, and the state authorities, not excepting the Supreme Court, openly defied the efforts of the Federal Government to enforce the obnoxious Fugitive

Slave Law. But the Bloody Third was Democratic to a man, and when Governor Randall, a states-rights Republican, asked the captain of the Union Guards what he would do if called upon to assist in enforcing the edicts of the state courts in opposition to the Federal authority, he answered that he would stand by the flag of the United States.

The Adjutant General of the state now deprived the soldiers of their arms and disbanded the company. Thereupon the Bloody Third boys determined to buy their own equipment, and on September 6, accompanied by friends and relatives to the number of several hundred, they engaged the *Lady Elgin* for an excursion to Chicago to attend a Democratic rally, hoping to realize enough money to rearm the company.

When the speechmaking and carousing were ended, the *Lady Elgin* departed on the return journey to Milwaukee, late in the night of September 7. The distance between the two cities is about a hundred miles, and one-fourth of it had been covered when fate bore down upon the merry-makers in the shape of the Chicago-bound lumber hooker *Augusta*.

A storm had arisen and the *Lady Elgin* was steaming northward against the wind. The *Augusta*, a schooner, was sailing east by south, with the wind and under heavy sail. Although the *Lady Elgin's* lights were clearly seen at a considerable distance, no effort was made to change the *Augusta's* course until the ships were almost together. Then the captain called "Hard up!" but still the course was not altered, and she crashed into the *Lady Elgin* amidship, tearing a great hole in her side and inflicting some damage upon herself.

A minute or so later the two ships drew apart and the *Augusta* continued on her way to Chicago, her captain making no effort to learn the extent of the damage he had inflicted, or to stand by the stricken steamboat.

Within fifteen minutes the engine fell through the *Lady Elgin* and the hull soon followed it to the bottom, while the hurricane deck and perhaps more of the upper works were torn loose and floated free. Two small boats containing twenty-one persons had been launched and both reached shore, although four passengers in one of them were drowned en route.

Thus the vast majority of the 400 persons aboard the *Lady Elgin* either went down with her or were thrown into the lake, where many succeeded in gaining pieces of wreckage for support. About two score got to the hurricane deck, where Captain Wilson did his utmost to direct and encourage them. Close to the shore the deck ran aground on a sand bar and broke up, and those whom it had carried almost to safety were lost in the boiling waves.

Meanwhile from Winnetka, Evanston and other adjacent points townsmen crowded to the lake shore to gaze helplessly upon the scores of men and women drifting inland to their death in the raging surf. In this way hours passed and reporters even had time to come from Chicago to witness the death struggles of the victims.

Among the onlookers was one brave youth, a student at Northwestern University, who in addition to being a good swimmer possessed a dauntless soul. When he perceived that the passengers drifting helplessly were too weak to make their way through the surf unaided, he plunged into the water and, seeking out a drowning woman, managed to bring her to land. Again and again he returned for others, until he was overcome by his exertions and by exposure to the chilly lake. Wrapped in blankets, he was standing by a fire which had been built when he saw a man drifting in, apparently holding another person in his grasp. Inspired by the sight, he determined upon one last effort, and two more victims, who proved to be husband and wife, were torn from the angry water.

In all, the youth entered the water sixteen times, to

bring back seventeen persons who were about to perish; and sinking at last in exhaustion and delirium, he repeated over and over the question, "Did I do my best?"

Although no monument preserves the memory of David Blish, the hero who perished with the *Phoenix*, a grateful university has inscribed a suitable bronze tablet on the Northwestern campus in Evanston, Illinois, as a memorial to Edward Spencer, hero of the *Lady Elgin* disaster.

Night of Horror on the Mississippi

By Don Terrio

MISSISSIPPI RIVER, April 27, 1865—Ask almost anyone to name the greatest ship disaster in history and he'll probably reply, "The *Titanic*" or "The *Lusitania*." Chances are he's never even heard of the steamship *Sultana*, which blew up on the Mississippi River on April 27, 1865, with the death of 1,700 men, women and children—approximately 200 more than lost their lives when the *Titanic* sank in the Atlantic Ocean.

The two-year-old *Sultana*, a side-wheeler built for the lower river cotton trade, was running her regular schedule from New Orleans to St. Louis when she took aboard 2,134 Union soldiers at Vicksburg, Mississippi, the evening of April 24. They were emaciated and weak, their faces drawn and haggard. Nevertheless, they were one of the most cheerful crowds ever to cross a gangplank; after months in Confederate prison camps they were returning North in an exchange of prisoners.

Their number surprised the regular cabin passengers. The soldiers marched onto the hurricane deck, around the cabins, down to the lower deck, and all around the boiler deck. Crammed into every corner of the ship, even into the hold, they had barely enough room to lie down side by side, wrapped in their blankets. But at journey's end would be Cairo, Illinois—and then home to Ohio, Michigan, Indiana, Tennessee, Kentucky or West Virginia. They were full of hope and excitement, and their talk was about wives, sweethearts, mothers, fathers.

In the cabins were a number of families, a honeymoon-

ing couple, a U. S. Congressman, and about sixty other passengers. With the crew, the ship carried nearly 2,300 men, women and children.

On the second day, passengers moved about the ship as best they could, watching the sights along the river. The Mississippi had overrun much of the countryside and the water was much colder than normal for spring.

Churning her way upstream, the *Sultana* passed many inundated islands on which only trees and large shrubs reached above water. Captain J. C. Mason of St. Louis, the ship's master, was a careful man. Several times he cautioned the passengers not to crowd to one side of the ship when they made a landing, because tilting the boat and then returning to a level position endangered the boilers.

Most of the passengers at one time or another went to look at the crew's "pet"—a vicious-looking nine-and-a-half-foot alligator in a slatted box by the wheelhouse. William Lugeneal of Perryton, Ohio, and others would now and then poke the 'gator with sticks to see him open his jaws. But the crew moved their pet to a closet under a lower stairway. Lugeneal had little idea that, in a few hours, the alligator would be instrumental in saving his life.

Just after dark on April 26, the *Sultana* landed at Memphis. Some of the stronger soldiers helped unload 300 hogshead of sugar, earning a little extra spending money. A leak in one of the ship's four boilers was repaired. It was several hours before she turned over her paddle wheels, swinging into the river to take on coal from a barge.

The chilly night was dark and starless. Lieutenant Joseph Taylor Elliott, returning to Indiana, reported later that he talked with Captain Mason early in the evening. The captain said, "I'd give all the interest I have in this boat if we were safely landed in Cairo."

At 2:00 A.M. the *Sultana* passed around a bend in "Hen and Chickens" islands, eight miles north of Memphis. Suddenly, dock watchers and Memphis citizens who were still

up gave a startled look toward the north. They had heard a dull roar several miles away. Aboard the gunboat U.S.S. *Grosbeak*, Mate William Floyd asked the quartermaster to look through his telescope and report what he made of a bright glare in the sky.

The quartermaster replied, "A large steamer on fire, sir." Floyd pounded on the door of the captain's cabin, shouting, "The *Sultana* is ablaze upriver, sir!" On the captain's orders, he called the crew.

The *Grosbeak* put out into the river, together with other boats from Memphis. But there was no hope for the *Sultana*.

The roaring explosion aboard the side-wheeler had untold tons of force behind it as hot steam burst its iron bonds. Several hundred men were hurled outward by the blast together with hot coal, huge pieces of a boiler, and the after-part of the deck. One man landed 300 feet from the ship, miraculously unhurt. Three other survivors landed in the water still on the piece of deck on which they had been sleeping.

The terrific blast ripped a great hole upward through the cabin and hurricane decks, tore out forward stairways, and left the upper works a complete wreck. The tall twin smokestacks crashed down upon the shambles, pinning a number of men beneath them. Flames broke out on the lower deck, around the broken boiler bed.

The floor of the main cabin, where officers were sleeping, dropped at the fore end without breaking off. It made an inclined plane to the lower deck which poured men and cots into the flames in a tangled heap. For a few moments, the explosion didn't seem to waken the passengers fully—almost all who survived later said they thought they were having a nightmare.

"Don't jump! We'll try to run ashore!" the mate shouted. But men began to scream. Someone called, "We've been shelled, the boat is sinking!" Scores leaped overboard.

Women still dressed in their night clothes ran shrieking from the cabins, carrying children in their arms.

The flames, fed by dry cabins which had fallen into the hot bed of coals, swept fiercely up and back through the light wood of the upper decks. Men tried to put out the blaze with buckets of water, but most of the buckets had been hurled overboard. Broken planks from the hurricane deck projected down, met the flames, and lifted them to the upper deck.

Scalded and burned, men crawled over each other to get away from the blazing center of the boat. The railings had been blown off, and hundreds were forced overboard by the struggling mass of humanity. Those who couldn't swim went down; many of those who could swim were dragged under by panic-stricken fellow passengers. The water was solid with maddened, clawing men. Dozens were knocked under by other men who jumped on them, or by planks thrown overboard. The paddle wheels stopped, and the bonfire in the river drifted with the current.

Men ran madly up and down the decks, crying and swearing. Others prayed quietly, then leaped overboard. Close friends embraced and jumped together. Those who kept their heads in the panic picked up pieces of planking or other wreckage before jumping. Captain Mason tore off window blinds and pitched them to the struggling men in the water.

Most of the lifeboats were wrecked. A group of men managed to get one boat into the water, but it landed bottom-up and would support only a few. Someone cut the ropes holding up the heavy iron-bound gangplank at the bow; it came down on the men below, crushing them to death. A hundred men grabbed the plank and hung on while they pushed it overboard. But the plank went under. When it came up, only two or three men still clung to it.

Just as a soldier stepped on the top of the starboard

paddle-wheel housing, it broke away from the boat. The housing tilted to a 45-degree angle, and its deck planking cracked to let the soldier drop part way through. Trapped and screaming, he struggled vainly to escape. The rising flames finally closed over him.

Men lay under heavy timbers, moaning for help. Their comrades pulled frantically at the wreckage, but were forced back by the flames. Other men, lying on the deck with broken legs or severely wounded, pleaded to be thrown overboard rather than be left behind to burn.

A woman, holding a rope tied to a mule that had gone overboard, saw her husband sink with their child on his back. Over and over, she moaned, "My husband and baby are gone!" Another mother fastened a life preserver about her little girl's waist and threw her overboard. But the life preserver was fastened too low, and the child came to the surface upside down. The frantic mother leaped into the water but was unable to reach her daughter.

Some survivors were saved by mules, hanging onto their tails while the animals swam to shore. One owed his life to a cow. The animal stopped him from being blown into the wheel house, where he would have been killed by the still-turning paddle wheel.

William Lugenbeal ran along the lower deck trying to find a loose plank, but all had been thrown overboard. He pulled at a piece of splintered siding, but it wouldn't break off. Then he remembered the alligator in his wooden box. Lugenbeal dragged the box out of the stairway closet, grabbed a bayonet, and ran it through the reptile three times. He then dumped the 'gator out, dragged the box to the edge of the deck, and jumped into the river with it. He was picked up several hours later by a gunboat.

Several hundred men were still in the bow of the boat, which hadn't yet been reached by the flames. Then the wind veered, sending a solid mass of fire against them. Preferring death by drowning to being burned alive, most of them jumped into the water.

Several non-swimmers managed to grab a coiled line, tie it to mooring rings, and throw it into the water. They also made a large chain fast. When the heat became too intense, the men dropped into the water, hanging onto the rope and chain while the ship drifted. After the cabins had burned and the fire had largely exhausted itself, they climbed back onto the hull and threw water on the still-burning wreckage.

The group of shivering men drifted downstream until the unguided hull struck a grove of small trees. Several of them put out in a raft made of timbers from the ship, passed a line around some saplings, and stopped the hulk. Using the raft and a hewed log they found floating at a near-by inundated house, they took the last two or three dozen men off the *Sultana*. A few moments later the hull sank, sending up a towering column of steam.

Some survivors floated downriver as far as Memphis. There were men and women on planks, barrels, window shutters, sections of railing, doors, bales of hay, horse troughs, parts of the deck, and other wreckage. The *Grosbeak* and other boats pulled in survivors wherever they could find them. A Confederate soldier picked up fifteen Union soldiers in his dugout canoe and took them to shore, forgetting the war in a humanitarian cause.

One seven-foot Tennessean surprised his would-be rescuers when they pulled up beside the log he was riding, a mile above Memphis. "Go to hell with your boat," he said. "If you couldn't come to help me before, you'd better have stayed away." He slid from the log, and swam to Memphis unaided.

When dawn broke, men were on shore all along the river, perched on logs, brush, trees and driftwood, rubbing themselves to keep warm and smacking themselves to drive away buffalo gnats and mosquitoes. Many had no clothes, and some were badly burned. A large number died of burns or from exposure after reaching shore. To keep up their spirits, survivors shouted back and forth along eight

miles of the Mississippi. Rescue boats went up and down the river, picking up survivors and taking them to Memphis hospitals.

Almost all of the cabin families were broken up. One youngster was the sole survivor of a family of eight. A bridegroom wandered up and down the river bank for days, but never found his bride.

The Father of Waters was kind to only a few that black April night. A young cavalryman managed to get on a stateroom door with his father, but the elder man was knocked off by a horse which jumped from the boat. The son was picked up unconscious. After recovering, he opened more than 100 coffins at Memphis in search of his father's body. Finally, he heard his father had been rescued, also unconscious, by Negroes from President's Island, four miles below Memphis. The son took the first boat to the island; there he found his father alive and well.

While the hulk of the *Sultana* drew spectators from many miles by boat and carriage, the government sent out a barge every day for more than a week to pick up the dead. Daily it returned, its deck covered with bodies.

There were many rumors about the cause of the explosion: the repaired boiler had failed; Confederates had placed a torpedo in the coal; the boat had tilted, causing water to shift in the boilers. Later investigation showed that not the repaired boiler, but another one, blew up. The *Sultana* was built with the tubular boilers used by boats on the upper Mississippi, rather than the flue-type boilers used by boats on the lower river. And when the *Sultana's* sister-ship *Missouri* had a less serious boiler explosion not long afterwards, it seemed to prove the contention that tubular boilers were not adapted to the muddy waters of the lower Mississippi.

Even though no other ship disaster claimed as many lives, history books no longer record the *Sultana's* story, losing sight of it among more important events—Lee's surrender to Grant on April 9 at Appomattox, Lincoln's

assassination on April 14, and Johnston's surrender to Sherman on April 26 near the spot where Durham, North Carolina, now stands.

The *Sultana's* survivors held meetings for many years. But today it is known to few. In the years that followed, the side-wheelers churned on to write a bright chapter of American history. And either flowing gently or swelling in flood, the Father of Waters was not again to see such a night as that which claimed the lives of 1,700 of the *Sultana's* passengers and crew.

The Great Chicago Fire

By Herbert Asbury

CHICAGO, ILL., October 8, 1871—For several years after the close of the Civil War, a respectable but not very prosperous laborer named Patrick O'Leary lived in the three rear rooms of a frame cottage at No. 137 De-Koven Street, on Chicago's West Side, with his wife Catherina and their five children, one of whom, James, later made his mark in the world—as Big Jim O'Leary, he was a rich and powerful gambler.

The two front rooms of the cottage were occupied by the family of Patrick McLaughlin, and in the rear was the two-story shanty used by the O'Learys as a barn; in it was kept a store of loose hay, a horse and wagon, occasionally a calf, and five cows which Mrs. O'Leary milked twice daily, peddling the milk about the neighborhood. High wooden fences connected the barn with sheds and other outbuildings on adjacent property, and the alley north of the O'Leary cottage was strewn with old boxes, discarded lumber, and other rubbish of a highly combustible nature.

On the evening of Sunday, October 8, 1871, Dennis Sullivan, a drayman, called on his friends the O'Learys and found them in bed; they had retired early, Mrs. O'Leary said, because she "had a sore foot." Sullivan and O'Leary talked for a few minutes about the unprecedented drought—only an inch of rain had fallen since July 1 and the whole Northwest was parched and dry, forest fires were

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raging in Michigan and Wisconsin, and the grass of the prairies was burning in a hundred localities.

About 8:30 Sullivan started home, walking slowly along DeKoven Street toward Jefferson. Halfway down the block he stopped, filled his pipe, and sat on the curbing to enjoy a quiet smoke. But as he raised his head to light the tobacco, shielding his match against the strong wind, the drayman saw a bright, pulsating glow in the O'Learys' barn. Crying the alarm, Sullivan rushed into the shanty and managed to drag out a calf, whose hair had caught fire. But when he went back to save the horse or a cow, his wooden leg caught in a crack between two boards and he barely escaped with his own life.

That was the beginning of the great Chicago fire; within two hours it was raging over a hundred acres, devouring pine houses, sheds, and barns as if they had been so many matchsticks, and was beyond all possibility of control.

Several things had enabled the flames to make such rapid progress in such a short time. Foremost was the fact that Chicago was, as the *Tribune* had said, "a city of everlasting pine, shingles, shams, veneers, stucco and putty"; of 60,000 buildings, two-thirds were constructed entirely of wood, with roofs of shingles, tar, and felt, all bone-dry from the drought and almost as inflammable as a bunch of firecrackers. The fire department was undermanned and possessed insufficient equipment, fewer than 200 men depending upon seventeen fire engines, eighteen pieces of other apparatus, and 48,000 feet of hose. But at least a third of the hose, and several of the engines and hose-carts, had been lost or damaged at previous fires and had not been replaced or repaired. Moreover, the firemen were exhausted; they had answered thirty alarms in one week, and only the day before had fought for fifteen hours against a \$750,000 blaze on the West Side. And when the DeKoven Street fire was reported to the watchman in the Court House tower, he made a mistake in the location, and sent an engine company stationed a mile and a half away in-

stead of one of the four which were comparatively near by. Finally, throughout the conflagration a wind which at times reached the proportions of a gale blew without ceasing from the southwest.

Half an hour before midnight the fire crossed the Chicago River into the South Side, ignited the roof of a shanty at Adams and Franklin streets, and leaped almost at once to the new \$80,000 stables of Frank Parmalee's bus company. Conley's Patch and Shinbone Alley vanished in a flash of fire and smoke, and the blazing rookeries disgorged their prostitutes, pimps and hoodlums to join the throng swarming back over the West Side bridges and through the tunnels. Gamblers' Row disappeared and so did Hair-trigger Block, and swinging slightly eastward the flames roared through the business district, destroying many important factories and all of the principal stores, wholesale houses, hotels, theaters, newspaper offices, and public buildings. Only two structures were left standing in the 460 acres bounded on the west, north, and east by the Chicago River and Lake Michigan, and on the south by a line running diagonally from Congress Street and Michigan Avenue to Polk and Wells streets.

In the early hours of Monday morning, October 9, the flames jumped the main-stream of the Chicago River to the North Side and "went through that section of 75,000 people as fast as a man could run"; 1,450 acres were burned over, and of 13,800 buildings fewer than 500 were spared. Among the first to go were the waterworks and pumping station on Chicago Avenue, and the new structure of the Chicago Historical Society at Dearborn and Ontario streets. With the latter went priceless and irreparable records, among them the original draft of Lincoln's Emancipation Proclamation.

Ahead of the reaching flames surged great masses of homeless and bewildered people, blistered and scorched by the terrific heat, carrying bundles and babies and invalids, dragging trunks and carts, stumbling, falling, trampling

women and children, fighting, cursing, and screaming in such a frenzy of terror that sometimes their cries could be heard above the thunderous tumult of the fire.

"The people were mad," said the *Chicago Post*. "Despite the police—indeed, the police were powerless—they crowded upon frail coigns of vantage, such as fences and high sidewalks propped on wooden piles, which fell beneath their weight, and hurled them, bruised and bleeding, in the dust. They stumbled over broken furniture and fell, and were trampled under foot. Seized with wild and causeless panic, they surged together, backwards and forwards, in the narrow streets, cursing, threatening, imploring, fighting to get free. Liquor flowed like water; for the saloons were broken open and despoiled, and men on all sides were to be seen frenzied with drink. . . . Everywhere dust, smoke, flame, heat, thunder of falling walls, crackle of fire, hissing of water, panting of engines, shouts, braying of trumpets, wind, tumult, and uproar.

"The brute creation was crazed. The horses, maddened by heat and noise, and irritated by falling sparks, neighed and screamed with affright and anger, and roared and kicked, and bit each other, or stood with drooping tails and rigid legs, ears laid back and eyes wild with amazement, shivering as if with cold. Dogs ran hither and thither, howling dismally. Great brown rats, with beadlike eyes, were ferreted out from under the sidewalls by the flames, and scurried along the streets, kicked at, trampled upon, hunted down. Flocks of beautiful pigeons, so plentiful in the city, wheeled up aimlessly, circled blindly, and fell into the raging fire beneath."

From the blazing dens of the underworld came swarms of hoodlums, thieves and prostitutes, hurrying to reap the richest harvest of loot that had ever fallen to the lot of American criminals. They hunted singly and in packs, snatching what they wanted from the drays and carriages and carts; breaking into saloons, stores and homes, filling their bellies with liquor and their pockets with money and

jewelry, covering their backs with fine clothing and their fingers and arms with rings and bracelets, dragging costly furniture into the streets and viciously ripping it to pieces because it must be abandoned to the flames.

"They smashed windows with their naked hands," went on the *Chicago Post*, "regardless of the wounds inflicted, and with bloody fingers rifled till and shelf and cellar, fighting viciously for the spoils of their forage. Women, hollow-eyed and brazen-faced, with filthy drapery tied over them, their clothes in tatters and their feet in trodden-over slippers, moved here and there—scolding, stealing, fighting; laughing at the beautiful and splendid crash of walls and falling roofs." Soon after midnight, with the Court House on fire, 350 prisoners were released from the jail in the basement. They immediately broke into a jewelry store and looted it.

William S. Walker, a Chicago journalist, said that long before daybreak on Monday the looting had culminated in scenes of daring robbery unparalleled in the annals of disaster:

"As the night wore on, and the terrors aggregated into an intensity of misery, the thieves, amateur and professional, dropped all pretense at concealment and plied their knavish calling undaunted by any fears of retribution. They would storm into stores, smash away at safes, and if, as happily was almost always the case, they failed to effect an opening, they would turn their attention to securing all of value from the stock that could conveniently be made away with, and then slouch off in search of further booty.

"The promise of a share in the spoils gave them the assistance of rascally express-drivers, who stood with their wagons before doors of stores, and waited as composedly for a load of stolen property to be piled in as if they were receiving the honestly acquired goods of the best man in town. . . . The scenes of robbery were not confined to the sacking of stores. Burglars would raid into the private

dwellings that lay in the track of the coming destruction, and snatch . . . anything which their practical senses told them would be of value. Interference was useless. The scoundrels . . . were inflamed with drink, and were alarmingly demonstrative in the flourishing of deadly weapons. Sometimes women and children, and not infrequently men, would be stopped as they were bearing from their homes objects of especial worth, and the articles would be torn from their grasp by gangs of these wretches."

Alexander Frear, a New York politician who had been Boss Tweed's spokesman in the New York legislature, saw the looting in part of the business district. He thus described it in an article for the *New York World*:

". . . I could see up Dearborn Street as far as the Portland Block, and it was full of people all the distance, swaying and surging under the reign of fire. Around on Lake Street the tumult was worse. Here, for the first time, I beheld scenes of violence that made my blood boil. In front of Shay's magnificent dry goods store a man loaded a store-truck with silk, in defiance of the employees of the store. . . . I saw a ragamuffin on the Clark Street bridge, who had been killed by a marble slab thrown from a window, with white kid gloves on his hands, and whose pockets were stuffed with gold-plated sleeve buttons.

"On that same bridge I saw an Irishwoman leading a goat that was big with young, while under the other arm she carried a piece of silk. Lake Street was rich with treasures; and hordes of thieves forced their way into the stores and flung out the merchandise to their fellows in the street, who received it without disguise, and fought over it openly. I went through the street to Wabash Avenue, and here the thoroughfare was choked with all manner of goods and people. . . . Valuable oil-paintings, books, pet animals, musical instruments, toys, mirrors, and bedding, were trampled under foot. Added to this, the goods from the stores had been hauled out and had taken fire; and the crowd, breaking into a liquor establishment, were

yelling with the fury of demons, as they brandished champagne and brandy bottles. The brutality and horror of the scene made it sickening. A fellow, standing on a piano, declared that the fire was the friend of the poor man. He wanted everybody to help himself to the best liquor he could get; and continued to yell from the piano until someone, as drunk as himself, flung a bottle at him and knocked him off it. In this chaos were hundreds of children, wailing and crying for their parents. One little girl, in particular, I saw, whose golden hair, worn loose on her back, had caught fire. She ran screaming past me, and someone threw a glass of liquor upon her, which flared up and covered her with a blue flame."

The authorities were powerless to stop the looting, but they did succeed in checking the outbreak of incendiarism which seems inevitably to follow and accompany every great conflagration. Firebugs were active from Monday night, when the fire burned itself out against the open spaces of Lincoln Park, until Wednesday evening, by which time the city was being patrolled by 2,000 special policemen, 400 men of the regular force, six companies of the Illinois militia, and four companies of regular troops of the United States Army, all under the command of General Phil Sheridan, who ruled Chicago under martial law until October 22. Seven men caught setting fires were shot, and an eighth was stoned to death by a mob of infuriated citizens at Fourteenth Street and Fourth Avenue, where his body lay in the street for twenty-four hours as a warning to his kind.

The Chicago fire was by far the most disastrous conflagration of the nineteenth century; in twenty-four hours it took 250 lives (that many bodies were found; at least as many more were believed to have been consumed in the fire), devastated an area of three and one-half square miles, burned 98,500 persons out of their homes, and destroyed 17,450 buildings, with a property loss of approximately \$200,000,000. Hundreds of books, newspaper and maga-

zine articles, poems, speeches, and plays were written about the catastrophe; no stereopticon collection was complete without views of Chicago before and after the fire, and as late as the early 1900s lecturers with magic-lantern slides were still drawing curious crowds. The disaster was the text of innumerable sermons, and scores of ministers declared that God had destroyed the city in punishment for its sins; the Rev. Granville Moody of Cincinnati was convinced that the calamity had been visited upon Chicago because it had voted down a proposition to close the saloons on Sunday. "It is retributive judgment," he declared, "on a city that has shown such devotion in its worship of the Golden Calf."

But nothing that was said or written about the fire solved the mystery of its origin. Legend has it that Mrs. O'Leary went into the barn to milk one of her cows, and that the animal kicked over a kerosene lamp, a tale which was given some color by the discovery of a broken lamp in the ruins. But both O'Leary and his wife declared, in affidavits, that no member of their family had entered the barn after nightfall, and that there had been no lighted lamp on their premises at any time during the evening.

Another story was that Patrick McLaughlin or his wife had gone to the barn to get fresh milk for an oyster stew; the McLaughlins were having a party to celebrate the arrival of Mrs. McLaughlin's cousin from Ireland. But they swore that no one had left their rooms except one young man, who went to the corner for a bucket of beer.

"Before God," Mrs. McLaughlin testified, "nobody went out to get milk."

A third story of the fire's origin was that it was started by some boys smoking pipes and cigars in the hayloft. In later years Big Jim O'Leary said that was what had happened. But he always insisted that he knew none of the boys and was not himself a member of the group.

On the morning of October 10, 1871, W. D. Kerfoot, a well-known real-estate agent and operator, went to the

ruins of his office in Washington Street between Clark and Dearborn. With the assistance of his clerk and the latter's father, he cleared away the hot ashes and built a board shanty sixteen feet long and twelve feet wide. Atop the structure he placed a board on which had been lettered: "Kerfoot's Block," and on the front nailed a large sign:

W. D. KERFOOT

EVERYTHING GONE BUT WIFE, CHILDREN
AND ENERGY

This was the first building erected in Chicago after the great fire. But by the 18th of October, ten days after the start of the conflagration, business was being carried on in 5,497 temporary structures, and within a year 100,000 men were constructing 10,000 permanent buildings at a cost of almost \$46,000,000. By the end of another decade Chicago was a bigger and grander city than even its most optimistic booster had ever imagined it would be.

Fiery Hell at Peshtigo

By Pence James

PESHTIGO, WIS., October 8, 1871—On Monday, October 9, 1871, John Mulligan, foreman of a lumber gang at Peshtigo, Wisconsin, arrived on foot in Marinette, seven miles to the north. His eyes were hollow and staring. He was covered with charcoal streaks. His clothing smelled burnt.

"Peshtigo is destroyed," he announced to astounded listeners. "Not a stick remains and its people are lying dead in the streets!"

The Peshtigo disaster occurred on the same day—and at the same hour—as the famous fire which burned out the heart of Chicago and killed 250 of its citizens. Chicago's disaster went down in history as "The Great Fire of 1871" but little was written about the fire at Peshtigo, which was one of the hottest blazes of all time and which caused three times as much human misery.

On October 8, 1871, Peshtigo was a robust community of 2,000 in Wisconsin's densely forested bay-shore area. The principal industry was an immense woodenware factory, located on the east side of the Peshtigo River, which bisected the town. Several lumber and grist mills, a sash and door factory, a foundry, and about fifteen stores and hotels comprised the rest of the business section. There were also about 350 homes, built along both sides of the river.

That was the picture on Sunday afternoon.

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On Monday morning not a building remained. It was difficult to tell where the streets had been. More than 600 people were dead. The thick forest, once the pride and support of the community, had become a blackened, smoking wasteland stretching as far as the eye could see.

The Peshtigo fire was unlike any previous conflagration. Sweeping in on a high, twisting wind, it engulfed the whole town before most of the residents were aware of the danger. The first warning sign, which appeared shortly after dark, was an angry red glow in the southern sky. Within minutes there followed a terrifying sound like the rumbling of thunder, caused by the explosion of methane gas produced from superheated wood and marshes.

The atmosphere quickly grew unbearably warm and then, with another loud explosion, the town was enveloped by a rush of air as hot as though it had issued from a blast furnace. The wind lifted the roofs off houses, toppled chimneys and showered the town with hot sand and live coals. The shrieks of men, women and children were scarcely audible above the roar and rumble of exploding gas and crashing timber. Buildings were now bursting into flame from cellar to roof with one puff. Fire appeared in a score of places simultaneously.

Vounteer firemen succeeded in getting a hose going, but it was burned to ashes immediately. People were struck dumb with terror, seeing nothing but fire overhead and all around them.

Frenzied crowds converged in a whirl of humans, horses and wagons on the main street that led to the river bridge. Sparks and flaming branches hurtled through the air, striking down victims. Some barely reached the river's edge when their clothing burst into flame. Men's whiskers caught fire. Solid walls of flame leaped across the river from building to building, forming an arch of fire over survivors in the water.

The river bridge was a scene of bedlam. People on the east side sought safety on the west; and those on the west

thought the only escape was to reach the east bank. They met on the bridge, which soon burst into flames and collapsed, dropping its burden of wagons, horses and humans into the river.

To add to the horror, the woodenware factory erupted like a volcano and sent a shower of burning wooden tubs and broom handles upon the tortured people in the water. Fiery logs blown out of the lumber mill fell among the victims with frightful, hissing sounds.

About fifty persons ran into a brick boardinghouse when flames enveloped the town, thinking the walls would protect them. Nothing remained of them next day but white ashes and two watches, stopped at 10:05 and 10:10.

Those who sought the presumed safety of cleared farm land found too late that the fire spared nothing. So intense was the heat that boulders in the center of clearings a mile wide were cracked apart. Tree stumps in such places were burned out, roots and all.

Before dawn the intensity of the conflagration began to abate, and the survivors who had been standing for hours in the cold river crawled out and threw themselves wearily on the hot, sandy ground. A low, marshy area on the east bank had afforded refuge for about 150 persons who had lain on the ground and were not touched by heat or flame. They were the only citizens of the entire village who suffered no physical torture from the fire. Those who had spent the night neck-deep in water, however, were dangerously chilled and badly burned.

Among the survivors was David Maxon, who had just recovered from a fever which still held his wife ill in bed. When the fire came he shooved their five children ahead of him, and with strength born of desperation dragged his wife, bed and all, to the river. He pushed the couch into a depth that covered her body, but not her pillowed head. He kept the children huddled about him through the dreadful night, and in the morning all were safe.

There were no bandages and no medical aid until Mon-

day morning when a tent arrived from Marinette and was turned into a hospital. Later that day the survivors were moved to a hotel in Marinette. In the evening—one day too late—rain fell in Peshtigo!

The fire had played strange tricks: in a hardware store sixty-dozen axes were melted into one mass. On the fire wagon the iron at the tip of the tongue was melted, yet the wooden tongue itself was not even scorched. A group of Swedes who were digging fire ditches had been seen lying dead at their posts during the height of the blaze. But rescue workers could find nothing to mark the place they had been except their shovel blades.

A combination of drought and carelessness was responsible for the Peshtigo tragedy. For more than three months there had been no measurable rainfall in Wisconsin. Though the tinder-dry forests were ready to go up in smoke, a gang of railroad workers had been burning felled trees south of Peshtigo, and it is thought that the big fire started when one of those blazes ignited huge quantities of marsh gas.

Newspapers devoted considerable space to Chicago's spectacular misfortune, but it was several weeks before they got around to recognizing the nature of the Peshtigo blaze. The governor of Wisconsin was forced to issue a special proclamation pleading with the people to divert their gifts from Chicago, which was being cared for by the whole country, to Peshtigo, where the toll of human life was far greater.

Yet today, when the Chicago and Peshtigo disasters are cited as one of history's most startling coincidences, people still inquire, "Why, what happened at Peshtigo?"

Wreck of the Pacific Express

By Keith Harris

ASHTABULA, OHIO, December 29, 1876—Few railroad disasters have combined more elements of horror than the one at Ashtabula, Ohio, the night of December 29, 1876. Throughout the preceding day, a blinding northeasterly snowstorm, accompanied by heavy winds, had hampered the movement of trains. The luxurious west-bound *Pacific Express* of the Michigan Southern & Lake Shore Railroad, due at Ashtabula at 5:30 P.M., was three hours late. When it arrived at the bridge spanning the Ashtabula River, the night was pitch-black and lamps had been burning for hours. Nothing could be seen even fifty feet ahead through the driving snow.

As the eleven-car train drawn by two locomotives—the Socrates and the Columbia—approached the bridge, it had to force its way through a heavy snowdrift; when it reached the span it was going a scant twelve or fourteen miles an hour.

Passengers were making the most of the comforts of the night. Some were playing cards, others were quietly dozing in their seats or enjoying a last smoke before settling themselves for the night. Ladies in the sleeping coach were preparing to retire; some had already done so.

Suddenly the wheels stopped turning, the bell-rope snapped, lights were extinguished. In an instant all felt themselves falling, falling. An awful silence seized the passengers. They sat breathless, bracing themselves as best they could, experiencing the eerie sensation of dropping into a fathomless abyss. Then, before they realized the full

horror of what had happened, the once-beautiful train lay at the bottom of the gorge, wrecked and broken and soon to be consumed by flames. The bridge had broken in the center!

As the Socrates reached the far side of the span, its engineer suddenly heard a sharp crack, like the report of a torpedo, and looked back to see the Columbia sinking out of sight. With great presence of mind he instantly opened the throttle valve, put on all steam and drove his engine forward. It was "like going uphill," he later recalled, but the Socrates reached the abutment and was safe. Not so fortunate was the Columbia. As it was drawn forward, it struck the abutment. For an instant the locomotive clung to its leader, held by the coupling rod; but as that broke, it fell, carrying the eleven cars with it.

At the bottom of the ravine, snow lay waist-deep and the stream was covered with ice eight inches thick. Upon this were piled the fallen cars and engine. All the passenger cars were heated by stoves, and in less than two minutes the train began to burn. In fifteen minutes the holocaust was at its height.

The wrecked cars, scattered in terrible confusion, were strewn among the iron beams and columns of the broken bridge. Ice, water and snow; rods, braces and beams; debris from the shattered train and bodies of men, women and children all were mingled in a wild conglomeration.

Lucky indeed were the passengers who were killed outright. Less fortunate were those who lay, injured and helpless but in full control of their faculties, watching the rapid approach of the flames. At least two lives were sacrificed to fire at Ashtabula for every one lost in the immediate shock of the disaster.

Amazingly, no one was lost in the last car. This was due less to a miracle than to the energy and presence of mind of a Negro porter. He broke a window and crawled through it, then broke other windows and extricated all the passengers before the flames could reach them.

Though an immediate alarm had been given in the neighboring town, the storm was so violent, the snow so deep, that help was slow in coming. When it did arrive, it couldn't do much. Those who attempted to rescue passengers pinned fast in the advancing flames were driven back by the intense heat.

Danger from all the elements threatened survivors. If they escaped the flames, the water threatened to engulf them. If they escaped the water, they were still exposed to the full fury of the raging storm. Some crawled through broken windows, tearing clothes and flesh, or smashed glass doors with bare fists in their frantic fight for life. Others escaped through openings in the sides or tops of cars.

Strong men, bruised and stunned, were led to safety by their wives. Others hobbled on broken limbs, not knowing the extent of their injuries. A father rescued his small children and returned for his wife, who was pinned down by the wreckage. The woman begged her husband to cut her throat before the fire reached her, but he managed to pull her loose and carry her to safety.

The flames kept rising, spreading far and wide, filling the valley. A cloud of smoke ascended, black and dense, from the paint and varnish and rich materials of that gilded wreck. It darkened the sky and rolled a thick cloud through the awful gorge. From within its frightful canopy came shrieks of agony and despair.

The living, driven from the wreck by the flames, could only stand and look upon the dreadful scene. For a time they heard the hopeless cry of those who knew that they must die. Then silence settled upon the scene, the awful silence of the dead.

When firemen at last arrived from the village of Ashtabula, the wounded were already coming up the bank. Citizens who rushed to the scene led gashed and bleeding survivors out of the valley. The rescued were distributed throughout the village, finding some degree of comfort on

couches and beds of the few hotels; on store counters; on the floors of private homes or saloons. The whole vicinity became a huge hospital in which doctors and surgeons worked frantically.

For a time the wreck was left unguarded, and plunderers made their way through the debris, taking watches, jewelry, shawls, satchels—anything of value. One dead man was even robbed of his boots. Next morning, nothing remained in the ravine but a charred and undistinguishable mass of car trucks, brake-rods, twisted rails and bent and tangled bridge iron.

When a count was made of the casualties, it was found that eighty-four had died and at least twice that number had been seriously injured—all of them the innocent victims of an iron bridge, built in 1865, which was faulty in its original construction. In spite of distinct indications of weakness the bridge had been in constant service for eleven years.

The surprising feature was that it should have given way when it did. A double-track bridge, it should naturally have fallen under the combined pressure of trains moving simultaneously in opposite directions. Instead, it suddenly gave way under a strain which was not particularly severe, even combined with the great atmospheric pressure of the storm.

As news of the Ashtabula catastrophe sped over telegraph wires from coast to coast, a sense of shock gripped the nation. On the distant hilltops of New England, in the green valleys of California, in great cities and tiny hamlets in the South and North, everything else was temporarily forgotten as a wave of sympathy swept America. For the wreck of the *Pacific Express* was one of the worst railroad disasters the United States had known.

Bring Out Your Dead

By Hodding Carter

MEMPHIS, TENN., 1878—No one in Memphis, Tennessee, could understand what kept the town together in 1878. It was a filthy, bankrupt city; its taxable wealth had shrunk from \$30,000,000 in 1874 to \$20,000,000. The municipal indebtedness had reached a staggering \$5,500,000, and one-third of the taxable property had been confiscated for nonpayment of taxes. Though the population was double that of 1860, trade was little better. Homeless Negroes, searching for jobs or Jubilee, thronged the streets as paupers and petty thieves. War, reconstruction and political debauchery had brought Memphis to the precipice.

In no way was the demoralization of Memphis more apparent than in its lack of sanitation. Dirty wells and cisterns supplied the drinking water which before the war had been taken from the Mississippi and the Wolf. Even the pavements were decaying.

This was the Memphis in which a Mr. and Mrs. Bionda operated a snack house on the river front, a haunt of hungry and not too squeamish boatmen when ashore. Mrs. Bionda, like everyone else, found it convenient to empty the slops and garbage into the gutter or the near-by shallows.

Perhaps Mrs. Bionda was throwing out the refuse one August night in 1878 when she swished carelessly and too late at a mosquito. Her mind was probably on other things.

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Yellow fever, for instance. For three months Memphis had been nervously discussing the great fever epidemics to the south. As far back as May the businessmen of Memphis, apprised that yellow fever was raging in the West Indies, had petitioned for a quarantine. The council had refused. In July the Memphis newspapers had reported an epidemic in New Orleans. Thereupon a quarantine station was established at railroad points outside the city.

In August it was rumored that in near-by Grenada, Mississippi, yellowjack was raging. Memphis became panicky. It remembered another August, in 1873. A New Orleans steamboat had left two sick men at Happy Hollow under the bluffs. Yellow fever had broken out in the settlement and spread throughout the city. Twenty-five thousand Memphians had fled. Of those who remained, 2,000 had died, and 5,000 others had been stricken and recovered. Memphis wanted no repetition of that terrible onslaught.

Mrs. Bionda died on August 13. Her death was reported the next day as the first yellow fever casualty, although actually two Negro children and a white man had previously succumbed. The rooms of the snack house were fumigated with carbolic acid and copperas, and the surrounding streets disinfected.

Twenty-two new cases were reported on the day of the announcement of Mrs. Bionda's death. Memphis went berserk with fear. A wild new flight from the city began. By the middle of September, 25,000 of the population had departed; this left only some 20,000, of whom 14,000 were Negroes. Before the epidemic was to run its course, 17,000 of these Memphians were to be stricken. More than 4,000 of the whites would die, but less than 1,000 of the 14,000 Negroes.

The crazed rush had ended by early September, for all who could or would flee had done so. Memphis was a ghostly city, its trade and traffic suspended, its living caring for the sick and burying the dead. The early morning

stillness was broken only by the cry, "Bring out your dead," as the burial carts made their rounds, and in the unearthly hush even the buzzing of the green-bottle flies, trailing the wagons to the graveyards, sounded loud. White funeral notices hung limp from houses and fences, and at the end of the last journey, drunken gravediggers waited beside the stacked coffins and shallow pits.

The men and women who remained when they could have fled, particularly the doctors and priests, acted with unending heroism. The priests had remained behind with their poor parishioners, the Irish. Twenty-four died. Fifty doctors, including many volunteers from other towns, succumbed.

The epidemic clothed some with unexpected majesty. "Down the Jericho Road," in the prostitution district, Annie Cook ran the Mansion House, a sumptuous bagnio on Gayoso Street. She discharged her prostitutes, and opened her gaudy rooms to yellow fever patients whom she nursed herself. On September 6, Annie was stricken. A week later the *Appeal* carried this epitaph:

"Annie Cook, the woman who after a long life of shame, ventured all she had of life and property for the sick, died September 11 of yellow fever which she contracted while nursing her patients. If there was virtue in the faith of the woman who but touched the hem of the garment of the Divine Redeemer, surely the sins of this woman must be forgiven her."

The conduct of the Negro police and Negro militia was likewise praiseworthy. The McClellan Guards, the Negro soldiery, and the Bluff City Grays, the white military organization, united in patrolling the streets and guarding the tent camp near the city where thousands of Memphians, financially unable to travel farther, had congregated. Negro male nurses courageously remained with their charges, and though rumors of rapes of sick women by some of these nurses persisted, no such crimes were ever proved.

But if heroism abounded, so did examples of cowardice and worse. Survivors caroused madly. Attendants pillaged the dying and the dead. A prominent citizen who was out of town when the epidemic began refused to enter the city even after being told of the death of his wife, her stillborn baby, and another child.

Courts-martial were established to deal with robberies. The decomposed bodies of a family of four, their bones "in a puddle of green water," attested to the reluctance of many of the living to approach the dead. Two decaying bodies on a principal street remained untouched for days. A naked, delirious woman, terrified of a drunken nurse, fled unclothed beyond the city limits, calling for her husband. Rats ate the body of a Negro woman, lying untended near the *Appeal* office, and died. A mother was found dead with the mouth of her lifeless baby clinging to her breast.

And there were unusual and grimly comic incidents. A woman died, but her healthy child was born posthumously. A twelve-year-old girl, deaf, dumb, paralyzed on one side of her face, and suffering from St. Vitus' Dance on the other, recovered from the fever and recovered all her faculties. Negroes dressed the bodies of the dead in carnival costumes. In St. Patrick's Cathedral, services were being held for an Irishman when the shrouded figure stirred, sat up, and yelled, "What the hell are you doing?"

The nation responded generously to the appeals of Memphis. The Howard Association, a charitable society, spent more than half a million dollars, and supplied 2,900 nurses. Thousands of dollars poured in from farmers, bankers, ranchers, and merchants in the North and West and South.

The fever raged throughout the long, unusually warm summer's end and early fall. In mid-October, frost covered the middle South. Then a freeze followed, and the epidemic ended. Seventy-five per cent of the whites who remained in the city had died, but less than ten per cent

of the Negroes. From records of this and other epidemics it is apparent that the Negroes of the South had somehow developed a comparative immunity to yellow fever.

Memphis had been hardest hit in this terrible year, but Memphis was not alone. In little Greenville, Mississippi, 150 miles below Memphis, 1,000 of its population of 2,300 had suffered yellow fever and 400 had died. In New Orleans, 4,046 deaths, the second highest number of victims on record, were reported. Fugitive Memphians, fleeing from the scourge that many carried with them, had spread the fever throughout the Mississippi Valley and beyond. Kentucky and middle Tennessee were heavily infected. And fear of yellow fever brought severe economic damage to the entire valley.

In this greatest of epidemics, yellowjack had chosen the most propitious of all times to strike. The lower river was battling to overcome the despair and the wreckage of reconstruction. The epidemic of 1878 hindered its efforts, reduced its population by death and desertion, and made its greatest cities, Memphis and New Orleans, almost synonymous with the scourge itself.

It is impossible to exaggerate the retarding effects of yellow fever, and those lesser deadly scourges—smallpox, cholera, malaria and dengue—upon the progress of the valley. Through the 19th Century, disease stalked virtually unchecked along the lower Mississippi, destroying thousands of its settlers, driving thousands of others to quit the baleful land of fevers, deterring uncounted numbers from seeking their fortunes in the rich, unexploited valley. Most of the Negroes remained, even after emancipation gave them the right to move freely, for they were comparatively unscathed. But they contributed toil, and not vision or capital or leadership, to the river; the strength of their bodies was their lone endowment, and they could not transfer immunity to their masters.

Yet the people of the river clung to their lowland towns and fields, doggedly suffering the chills and fevers and

outlasting their curse. Had Reed and Agramonte and Carroll lived and proved in 1800 instead of 1900 that yellow fever was transmitted by the *Aedes aegypti*, the results in lives saved, in territory developed, and in human contribution to the nation's aggregate strength would have rewritten the economic history of those hundred years. The tiny mosquito, intermediate host to a virus as yet unidentified, cursed the valley with destruction. For a sorrowful, death-ridden century, a fleet, whining insect had its way against ignorant courage.

"The Bridge Was Burned at Chatsworth"

By Elmo Scott Watson

CHATSWORTH, ILL., August 10, 1887—Songs have their way with memories; a few bars of melody, a couple of lines of words, and the spell is complete. But to one man I have known, a certain sad old ballad evokes a night of terror, the night of August 10, 1887.

Mr. B. M. Judd of Colfax, Illinois, was ninety-two when I last saw him. But he was still haunted by his memories of the T.P. & W. train wreck at Chatsworth, Illinois, sixty years before.

He and a few others who may yet be living survived that wreck, and their memories are added to the evidence of a few pathetic souvenirs—a bent and twisted dollar, an old Pullman blanket, and the ballad:

*From city, town and hamlet
There 'rose a mighty throng
To view the great Niagara—*

About 800 people from northern and central Illinois, and some from far points in Iowa and Wisconsin, "made up" a train for an excursion to Niagara Falls. It was a custom of the era to assemble such groups, one which the railroads encouraged.

People were in a holiday mood as the Toledo, Peoria & Western train pulled out of Peoria. It was a family affair.

*With joy they sped along;
The maiden and her lover,
The husband and the wife,
The merry prattling children
So full of joy and life.*

In one of the cars a quartet of young men got together to sing hymns. An elderly couple obligingly changed seats with two of the singers, unaware that such a simple courtesy would shortly save their lives.

*The engineer was standing
With eye upon the track
And hand upon the throttle—
While shades of night were black.
They reached the town of Chatsworth
And rushed on through the gloom;
Oh, could someone have warned them
Before they reached their doom!*

There was no warning. A little knoll two miles east of Chatsworth blocked the view of the track ahead from the alert eyes of Engineer Sutherland in the lead locomotive.

It was a tandem hitch, and in the second locomotive cab Engineer Hitchcock may have been recalling his words to the dispatcher back in Peoria, "This is a dangerous trip." He should have obeyed his premonition.

The lead engine sped up the hill and down toward a bridge which crossed a deep ditch. Then, with horror in his voice, Engineer Sutherland called to his fireman, "My God! The bridge is burning! Jump for your life!"

The fireman jumped, and with rare presence of mind Sutherland opened his throttle full and snapped the coupling. His engine bucked and snorted, and raced across the shaky structure to safety on the other side, whistle wide open to warn Hitchcock in the second locomotive.

Hitchcock's luck was out. As Sutherland had done, he grabbed his throttle, too. But the engine was already pounding the approaches to the trestle. There was plenty of momentum to hurl the engine across, but the bridge gave way under the weight of the second engine, and it smashed full-speed into the clay bank on the opposite side of the ditch, its drivers heaving, its wheels churning air. (They found Hitchcock later, dead with his hand on the

throttle in the best railroad tradition, his watch stopped by the impact at 11:45 P.M.)

The wooden coaches behind plunged crazily after the locomotive, tearing and grinding to matchwood against the tender. And in the cars people screamed and died. The old couple saw the four singers crushed to death and lived to tell about it. One youngster, horribly hurt, saw his mother's head roll grotesquely in the aisle. A man found himself holding a silver dollar tortured out of shape by the crash, and yet he was alive and would carry that dollar to the end of his days.

Then the greater horror came. Kerosene lamps had sprinkled the dead and the living with oil, and the wooden wreckage caught fire.

There was no immediate way to help those pinned in the burning shambles of the excursion train. A shaking brakeman seized an unbroken lantern and, with another survivor, ran gasping and sobbing two miles back to Chatsworth.

The town was sleeping, unaware of disaster on its doorstep. With the help of a lone night owl, who happened to meet them in the street, they routed out the volunteer fire department. The rest of the town rubbed its eyes sleepily, and then leaped out of bed.

A wire was sent to Peoria, and while a trainload of doctors and nurses was being readied, the townspeople of Chatsworth rushed out to the scene of the wreck to aid survivors.

Mr. Judd was in the wreck all this time. He was lucky. The coach he was in didn't burn with the others. But it was hours before he was released—hours of horror as he lay pinned down in splintered wreckage between a dead baby and the child's screaming mother.

He remembers how doctors, summoned from near-by towns, went along the wrecked cars administering morphine to relieve the suffering of people trapped within them, while the Chatsworth volunteer firemen fought to

keep the flames from spreading to the other coaches. Finally he was pulled out and carried away in a Pullman blanket. He kept that blanket as a grim souvenir of the worst experience of his entire life.

One ten-year-old boy, the lad whose mother had been decapitated, is remembered for his heroism. Despite a broken leg and an injured eye, he begged rescuers to "take care of those worse hurt than I."

The Chatsworth town hall served as hospital and morgue. A resident who aided in the relief work recalled women dying on the stage, and one who succumbed while lying on the piano. The hall was resplendent with decorations for an entertainment, and the garish gaiety of the bunting and flags was in grim contrast to the scenes that took place in the hall that night.

By morning relief had arrived and the rescue work was complete. It was known that eighty-one had been killed outright; 372 had been injured, and of these a number subsequently died of their injuries.

The nation was shocked. Lithographs of the wreck were printed and sold to grace parlor walls. T. P. Westendorf, whose initials coincided, oddly, with those of the T.P. & W., wrote a ballad about the wreck, some of the words of which I have quoted.

Nor was this calamity a sensation quickly forgotten. As recently as 1937 the wreck was recalled by oldsters at Chatsworth. On the fiftieth anniversary of the disaster survivors gathered there to reminisce. Flags were at half-staff, and a quartette of young men sang *Nearer My God to Thee*. A brief ceremony was held in the town park. Those who had lived through that night of fear and pain joined in the refrain of the ballad:

*The bridge was burned at Chatsworth,
One hundred lives were lost!*

The Blizzard of 1888

By Stephen Turkel

When, on December 26, 1947, New York experienced a 25.8-inch snowfall—the greatest in the city's recorded history—the event was a body-blow to "The Blizzard Men of 1888." This select group had assumed the responsibility of keeping fresh the memory of what for almost sixty years had been the unchallenged Goliath of New York blizzards. But a careful comparison of the two snowfalls revealed that, though statistics favored the more recent storm, the blizzard of '88 was far more serious as a disaster.

Both storms took the city completely by surprise. The blizzard of 1947 swept in from the Atlantic, where no weather observations are made, and before it had ended New York lay smothered under 99,000,000 tons of snow. More than 30,000 men, at a cost to the city of \$6,000,000, worked in shifts to load the snow into trucks, shovel it into sewers, clear main streets to facilitate transportation of fuel oil, food, coal and medicine. Thousands of commuters were marooned overnight in cold, stalled trains between Manhattan and their homes. Stranded suburbanites filled midtown hotels to overflowing. Trains were as much as twelve hours late on normal runs of less than an hour. Mayor O'Dwyer, informed of the emergency in El Centro, California, where he was on vacation, flew home to supervise relief work. City hospitals were plagued by the greatest number of calls for aid in their history. At least seventy-seven deaths were attributed to the storm in eight North Atlantic states.

On March 12, 1888, the day of the legendary blizzard, the weather forecast for New York was: "Clearing and colder preceded by light snow." By the time most Manhattanites received their morning paper and read the amazing forecast, almost two feet of snow had fallen and a forty-mile-an-hour gale was blowing. The temperature, which had dropped steadily through the night, now registered 15 degrees. The barometer, still falling, was to reach a low of 29.62.

The blizzard, which raged for thirty-six hours and generated winds as high as seventy miles an hour, started out as a "mild-mannered Dakota storm" that suddenly shed its gentility and swept furiously up the Atlantic seaboard. Towns and cities a hundred miles inland felt its anger. All districts within a thirty-mile radius of New York were paralyzed, while Washington, Baltimore, Pittsburgh, Philadelphia and practically all of the state of New Jersey lay prostrate. Then, losing some of its intensity, the storm followed the coastline, whistled through New England, and finally dissipated itself in Canada. When it had ended, a tally revealed a loss of 400 lives and countless millions in property damage.

New York on that first morning of the '88 storm—a blue Monday if ever there was one—lay buried under enormous drifts of snow while icy winds whipped the city with relentless fury. Telephone poles were severed like matchsticks; upturned vehicles lay strewn like driftwood in the streets. Houses were unroofed, steeples toppled, and windows were shattered to bits. Children were blown through the air to be buried in twelve-foot snowdrifts. Dogs and cats lay huddled in semi-sheltered corners, soon to be interred in the white mass. Swarms of sparrows beat desperately against houses, only to drop exhausted and be whisked away by the wind.

All transportation was at a standstill. No trains left the city and few came in. One, scheduled to leave Danbury, Connecticut, at 8:15 A.M. Monday, finally reached New

York—seventy miles away—at 2:00 P.M. Friday. Elevated trains stranded between stations brought out hardy opportunists with ladders; they charged passengers two dollars a head to descend to the street.

By noon Monday, New York was almost completely cut off from the outside world. Telephone and telegraph wires were down, buried in the snow. Telegrams between New York and Boston were sent over the Atlantic cable via England, crossing the ocean twice to reach points less than 250 miles apart.

Navigation in and about New York harbor fared no better. Some ships rode out the storm at anchor in the turbulent harbor, but damage was extensive. Twenty-seven vessels were washed up on shore, and twenty-five inside the stone pilings near shore flew distress signals. Ferries which attempted to run at infrequent intervals narrowly escaped capsizing. The palatial yacht *Cythera*, owned by millionaire William A. W. Stewart, disappeared en route to Bermuda and was never heard of again.

Tuesday saw no appreciable change except that telephone linesmen and snow shovelers were doing a herculean job of repairing the ravages of the storm. As they dug, snowdrifts yielded the bodies of many people who had died of exposure.

By Wednesday the storm had abated, but new dangers arose to plague the city. Huge drifts still prevented trains from running. Food, coal and milk were running low, and famine seemed not far off. What little supplies remained were selling at three and four times their normal price.

Luckily, things took a sudden turn for the better on Thursday. The sun came out for the first time. Communication had been partially restored, and trains, ferries and elevateds were running again, routing the fear of famine. The city was digging itself out.

Bizarre stories were on every tongue. There was, for instance, the natural ice bridge which formed over the East River on Tuesday when large chunks of ice floated

down the river with the tide, jamming to form a solid mass between Fulton's Ferry, Manhattan, and Martin's Store, Brooklyn. All through the day pedestrians swarmed over this bridge, scorning the ferries. Many of them had to be rescued by tugs when the span suddenly disintegrated.

A man in Great Neck, Long Island, stoutly maintained that he had walked over the tops of trees in snowshoes in order to get home. Another man, attempting to cross the Brooklyn Bridge on foot, sank exhausted within 100 yards of his goal. An alert policeman who came to his aid had to rake icicles from the man's mustache to allow him to breathe. One man who died a natural death on Sunday night in the suburbs could not be buried until Friday. He was kept in a tub of ice in the living room of his house, the ice being replenished each day from the great store of frozen snow outside his home.

A small boy in Manhattan fell out of a window, rolled off an awning into a snowdrift and walked back into the house through the window, crying. And on one of the highest drifts in front of Madison Square Garden, a puckish citizen had placed a sign which read: "Keep Off the Grass."

By Sunday, piles of snow and slush were all that remained of the great storm that had held New York in its perilous grip. Strangely enough, the blizzard had established few Weather Bureau records. The city had experienced larger snowfalls, storms with more powerful winds, but none had combined the elements of wind, snow and bitter cold. And none had been so unheralded.

So in spite of the record set by the blizzard of 1947, the select little company will doubtless continue to meet each year on March 12 to commemorate the earlier storm.

Johnstown Remembers

By Jo Chamberlin

The Johnstown flood of 1889 was one of America's worst disasters. Johnstown was destroyed in less than a quarter of an hour. More lives were lost than in the San Francisco earthquake and fire, the Iroquois Theater fire in Chicago, the Dayton flood, and the 1937 Mississippi flood combined.

For years the people of Johnstown had lived complacently below the dam that gave way. Situated where two rivers join, walled in by high Pennsylvania hills, the community had been visited by floods from its rivers since 1808, each involving considerable loss and inconvenience. The dam above the town had broken once before but the damage had been slight. The inhabitants were used to moving to upper floors and taking their livestock to safe pasture at flood time, and there was no general recognition of the fact that they were in the presence of impending disaster.

Johnstown in 1889 was a bustling city of 30,000, built along the flats of the Conemaugh River. The Conemaugh was a turbulent stream, flowing swiftly down a narrow gorge until it widened out to join the Stonycreek River at Johnstown. Every spring the Conemaugh and Stonycreek became writhing torrents.

Yet nobody worried much about it, for Johnstown was prospering. In near-by hills were valuable coal, lime and iron. Johnstown had new steel mills, streetcars, water-

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works, electric lights, a fine new library, and an opera house. Times were good, trading brisk.

New streets were added by filling in on river land, thus further narrowing a channel already too small. In spring the Conemaugh would overrun its banks and fill workmen's homes with mud in the lower part of Johnstown. But town officials denounced those who expressed the fear that some rainy spring, when the Conemaugh was running amuck, the dam might go.

The dam was a huge earthwork structure, ninety feet high and 930 feet long, impounding Conemaugh Lake Reservoir sixteen miles above Johnstown. The reservoir was on South Fork Creek, a tributary of the Conemaugh. This dam had been completed in 1853 to store water for the Pennsylvania Canal, an important commercial route to the West, but it was abandoned when the Pennsylvania Railroad replaced the waterway.

It was three miles long, over a mile wide in places—one of the largest reservoirs in the United States. The reservoir was seventy-five feet deep at the dam. There was enough water impounded in it to fill a canal from New York to Chicago—twenty million tons held back by an earth-fill, stone-faced dam, 280 feet thick at the base but only twenty feet thick at the top.

The Pennsylvania Railroad, which bought the canal in 1857, had no further need for the reservoir. The dam deteriorated and continuous seepage drained the reservoir to half its normal level. A small break occurred in July, 1862, but the water was low and only the lower part of Johnstown was flooded.

In 1879 the site was leased as a fishing and hunting club by a group of Pittsburgh millionaires. The club hired men to repair and heighten the dam. The job looked fine, but stumps, sand, leaves and straw had been dumped in the breach. The dam itself was rotten. It had no solid cement core.

In June, 1887, Johnstown streets were flooded by the swollen rivers. Leaks were reported in the South Fork dam, but no investigation was made. There was only momentary alarm.

During the last week in May, 1889, there was an unprecedented rainfall in western Pennsylvania. Six inches fell. Storm after storm drove across the mountains. Day after day the rains poured down from leaden skies, until the overflowing Conemaugh with the aid of the torrential Stonycreek had flooded Johnstown streets to a depth of three to six feet.

At the dam, water rose steadily until Friday, May 31.

On that drizzling Friday morning, men rode horses in the waters of Johnstown streets, cracking jokes with citizens who had retreated to second floors. Meanwhile, an official of the fishing club, alarmed at the water seeping through the dam, set men to work with spades and shovels. It was no use—more leaks appeared.

At noon, a civil engineer, John G. Parke, inspected the dam in the pelting rain. He realized it would not hold. On horseback he rushed to the village of South Fork, two miles below, where South Fork Creek joined the Conemaugh, to warn its 2,000 people. They took to the hills.

Telephones were not then in wide use, and mountain washouts had cut service. But Parke sent two men with telegrams of warning for Johnstown to a near-by telegraph office.

Tragically, the clerk did not tell the men that wires were down. The messages never reached Johnstown. If Parke had known, he could have ridden cross-country with the warning.

At the dam, men worked frantically, but gradually trickles began seeping over the top. For a while, as workmen watched with sickening hearts, nothing happened. Then small stones began washing over, followed by larger and larger stones, in an alarming, fate-filled crescendo. Soon a

notch twenty feet wide opened on top of the dam. With a rumble and roar, a great V-shaped section gave completely away at 3:30 P.M.

Johnstown was sixteen miles away and almost 400 feet lower. It was going about its business in all good humor. Surely, the high waters would soon go down.

Through the breach rushed more than half a million cubic feet of water in less than an hour. Within a few minutes there was an avalanche of water seventy-five feet high. It overturned huge trees, crushed homes and barns like matchboxes, picked up huge boulders, and scoured the valley clean with them as it went. In actual volume it was as though Niagara Falls had been turned into the valley. And the results were the same: annihilation.

Traveling at times forty miles an hour, the flood swept down to the point where the South Fork joined the Conemaugh, already flowing higher than any man could remember. People at the village of South Fork had fled to the hills, and they watched their town disappear under muddy waters. Then the torrent turned and started roaring down the Conemaugh.

A railroad ran along the river bank. Part of the line was quickly washed away, together with bridges and rolling stock. Ahead of the oncoming flood the engineer of a work train tied down his whistle as a warning, but the flood waters quickly overtook him. Miraculously, he escaped to higher ground, with the waters churning around his legs. The whistle suddenly stopped. The train was swept off the tracks and into the current.

Other communities between South Fork and Johnstown—Mineral Point, Conemaugh, and Woodvale—all met destruction.

At Woodvale, just above Johnstown, the Conemaugh valley is very narrow; there the waters rose to a wall 100 feet high. More than 250 houses were crushed. A wire-and-steel works was demolished, its machinery and stock loosed into the boiling current. Barbed wire and steel fenc-

ing became ensnarled with the floating rubbish, dragging people under. Careening timbers crushed those clinging to other timbers. Swimming was no help.

A passenger train was stopped just above Johnstown. One survivor tells of hearing about four o'clock the repeated shrill whistle of a locomotive up the valley. There had been talk of a break in the South Fork dam and he realized that this was the warning. He spread the alarm and then went forward to the baggage coach to release his hunting dog. By then the other passengers had started for the near-by hills.

"As I jumped off the coach I looked up the valley and was almost paralyzed by the sight," he records. "I saw what appeared to be an advancing rotary wave of black water, forty feet high and not more than 300 yards away. In that hasty glance I saw huge tree trunks lolling in the air as they turned endwise and disappeared. I sprinted up the steep grade of one of the streets, glancing back as I ran: I wished to see the flood pass the streets. But between glances the advance wave of the flood rushed by, carrying the houses away at the lower end of the block I was on. It backed up in the street to within thirty feet of where I was running, covering ground I had passed over less than five seconds before."

With no warning but its roar and the scream of the locomotive whistle in the valley, the flood rolled down upon Johnstown at 4:10. Water in the streets was already six feet deep in places. There was no time or chance for mass flight.

The waters swept to the hills in the western part of town, then drove through the flats of central Johnstown. By now the height of the flood had been reduced to thirty feet but the water carried tree trunks, heavy boulders, and debris that acted as battering rams against the city's houses, most of which were of frame construction.

Just below Johnstown the Pennsylvania Railroad bridge, approached by a high embankment, spanned the Cone-

maugh. It was a long, massive structure, with arches supporting a four-track roadbed thirty-two feet above the normal river. Flood waters filled the arches with wreckage and debris, forming a leaky but immovable dam. Thus Johnstown, built on the river flats before it, was covered with an immense and swiftly moving whirlpool, twenty-five feet deep and three-quarters of a mile wide. The bridge saved Cambria and other towns below Johnstown from complete destruction, but in this maelstrom were enacted the most tragic scenes of the flood. One account tells how thousands who had survived the first onslaught floated around helplessly in the whirlpool, "most of them on roofs, some clinging to other wreckage, shrieking and praying for help, while groups of other survivors rushed about the shore lines, frantic but completely powerless to render aid except to those few who, by accident, chanced to float near."

Few of those who clung to wreckage survived. They were either thrown into the flood or pitched into the mass of debris in front of the bridge. Several carloads of petroleum had been overturned by the flood. The oil saturated driftwood and houses. At six o'clock fire broke out at the bridge. To refugees on the hills above Johnstown the scene below must have seemed as though the Flood of Genesis had been loosed in Hell. Rafts would drift nearer and nearer to the pyre and then be thrust into it. Men worked heroically from the embankment and from the hills, going out onto the wreckage to free victims; but generally their efforts were in vain; the crackle and crash of burning timbers would suddenly still the screams of the dying. The fire burned for four days, consuming hundreds of bodies fast in the debris.

Through Friday night the flood waters gradually receded.

On Saturday morning, dazed survivors began wandering about, seeking loved ones, extricating survivors from debris. Drowned mothers and children were found locked in one another's arms. Nearly 3,000 were dead. Streets

were leveled; buildings vanished. No food or dry clothing was to be had. No communication. No shelter. What had been a thriving city was now a vast muddy plain.

Why no more perished is a mystery, common to all great disasters. Every surviving Johnstown citizen had lost a brother, sister, relative or friend. Whole families were wiped out, yet most people lived. Why? The Pennsylvania Railroad bridge probably saved more lives than it lost by preventing many refugees from being swept down the river; many brick or stone buildings in higher parts of the town stood firm; people in them could later struggle through water to near-by hills. Those in the direct course of the flood had little chance.

Strange things occurred during the disaster. A five-month-old baby was rescued uninjured at Pittsburgh the next morning after floating the entire seventy-five miles on the floor of a house.

A mare standing in an alley was submerged by the waters; whole buildings were seen to pass over her. However, she was found later in a cellar, a half mile away, muddy but unhurt. Rescuers found a stable buried under two wrecked freight cars. It contained a cow, calmly chewing her cud, a small dog, and five angry wet hens.

A couple were married just before the flood. With their guests they took refuge on the second floor, then the third. They all passed a horrible night, wondering when the building would go. It didn't. Next morning the wedding party, still in gala clothes, stepped out of the house, picking their way carefully among the sprawled, grotesque bodies of the dead.

One of those who miraculously escaped the flood, Victor Heiser, lived to record his delivery in *An American Doctor's Odyssey*. A boy of sixteen at the time, he had been sent to the barn to see about a pair of fine horses his father owned. As he started toward the house he heard the terrifying noise of the flood and saw his father frantically motion him toward the top of the barn. Hardly had

he reached the ridge of the tin roof when he saw his home crushed before his eyes. The barn, instead of being shattered, was ripped from its foundation. Clinging to a piece of the roof, he was borne headlong toward a jam where wreckage was piling up between a stone church and a three-story brick building. Into this hurly-burly he was catapulted.

"The pressure was terrific," he records. "A tree would shoot out of the water; a huge girder would come thundering down. As these trees and girders drove booming into the jam, I jumped them desperately, one after another. Then suddenly a freight car reared up over my head; I could not leap that. But just as it plunged toward me the brick building gave way, and my raft shot out from beneath the freight car."

Once out in the open water again he was carried toward the bridge below the city. Some timbers ahead of him struck the stone arches and plugged them tight. In the recoil of the water his raft was swept behind a hill. As it passed a brick building he was able to jump to the roof and join a small group of people stranded there. The building held while others about it were smashed.

The biggest problem after the waters subsided was the burial of the dead.

Bodies were jammed in debris, covered with mud and muck, thrust in strange places. Many were never found at all. There was grave danger of disease in Johnstown, for by the time many bodies could be recovered decomposition had set in. Six thousand men were kept busy for six weeks, cleaning up the city, dynamiting, burning, salvaging, burying the dead. So tightly was wreckage massed together that thousands of pounds of dynamite were required to loosen the huge piles of it. One pile was twenty feet high and fifteen acres in extent, made up of trees, timbers, steel rails, horses, barbed wire, bathtubs, mattresses, freight cars, wagons, plumbing fixtures, books, kitchen utensils, stoves,

sewing machines—everything known to the living of the day.

Property damage was more than \$20,000,000.

Eight morgues were set up. Anxious relatives walked between the rows of dead, seeking loved ones. Mutilated bodies were sometimes identified wrongly—the person would show up later, alive and well. One boy was identified as nine different lads, within twenty-four hours. Only clothes and jewelry could identify some of the battered bodies. Nearly 800 victims were never identified at all. They were buried together in "the plot of the unknown dead," the crude coffins laid end-to-end in long trenches.

Men found cutting off fingers and ears of dead persons for their jewelry were beaten unmercifully by vigilantes. A picket line was set up; no one came into town without good reason. The National Guard was called in to maintain order. Crazy survivors caused as much trouble as the law-breakers. One man, who had lost his four children, walked into a hardware store, bought a revolver, and shot himself on the spot. Bereaved parents had to be restrained from throwing themselves into the waters which had taken their children.

America was quick to offer Johnstown a helping hand.

Reporters dramatized the flood to millions. America, deeply moved, came through generously. Nearly \$4,000,000 was contributed. Near-by farmers and residents housed victims until they could rebuild their homes. Cities rushed clothes, food, and money.

Gifts came from England, Germany, Turkey, Italy, Persia and Mexico. The Y.M.C.A., fraternal organizations, the Red Cross all sent men with cash. Clara Barton, founder of the American Red Cross, came from Washington in person, and labored for many weeks.

A Flood Relief Commission carefully distributed the \$4,000,000. From lessons learned in Johnstown, disaster relief for other communities thereafter was put on a systematic basis.

After '89, other communities examined their near-by, dangerous dams, and doubtless other disasters were prevented. Standards of production were improved, margins of safety increased. Johnstown continued to have trouble with its rivers, culminating in the flood of 1936 which caused property damage of \$40,000,000 and made 9,000 homeless. Again the nation responded, giving \$1,250,000 for the relief of the victims. Only in 1937 was a large-scale flood-control project launched, to end forever the disastrous menace to Johnstown.

Inferno at Hinckley

By Stewart H. Holbrook

HINCKLEY, MINN., September 1, 1894—There was little of dawn about the morning of September 1, 1894, in the woods of eastern Minnesota. Throughout the dark early hours, blazing stumps of pine lighted up a logging load in the long swamp west of Hinckley Village and gave the scene an air of peculiar and ominous beauty.

These stumps had smoldered unheeded through July and August in the swamps and cutover lands around Hinckley, Mission Creek, Pokegama and Sandstone, all in Pine County. Now the stumps began to blaze in a morning that had no dew nor other moisture about it.

In Hinckley, metropolis of the region, it was just another smoky Saturday. The whistle of the Brennan Lumber Company's big sawmill said it was seven o'clock, but nothing else indicated that day had begun. It was all sort of gray, neither day nor night. Men obeyed the whistle and the ten-hour drone of saws started cutting lumber and shingles that made Hinckley an important station on the railroads between St. Paul and Duluth.

The town's population was at least 1,200—some said more. There was an Odd Fellows' Hall, a volunteer fire department, three churches, five hotels and saloons, eight stores, a restaurant and a roundhouse. Two railroads crossed at Hinckley, each with its depot. The Eastern and Minnesota ran north to Duluth, south to Minneapolis.

Excerpted from the book Burning an Empire, published at \$2.50 by the Macmillan Company, New York, N. Y.; copyright 1943 by Stewart H. Holbrook.

The St. Paul and Duluth's corporate name explained its route. Hinckley Village was built in the triangle formed by the two lines of steel and the Grindstone River.

On the morning of September 1, the pall of blue-gray smoke appeared to lift for a few moments, and everything seemed bathed in a ghastly light of pale yellow. Human beings and objects looked unreal. The strange light passed, and again the gray sifted down, deeper and darker.

Out on the farms and homesteads, fire was creeping close, running along the fences and rearing up at cabin doors and barnyards. In Hinckley, just before noon, a sudden gust blew sparks from burning stumps into the millyard, and piles of lumber started to burn. A crew went to work hauling water in barrels, dousing the lumber and the nearest stumps. The wind died away, and again a dead calm settled over Hinckley. But it was an uneasy calm.

Right after the one o'clock whistle, another wind—stiffer than the first—came out of the southwest, and the volunteer fire department was called to the edge of town where a dozen fires were entering the village. They soon found that neither water nor dirt had any effect. The wind continued to freshen, and now hot coals that came riding on the wind burned and smoldered in streets that were more sawdust than soil. Soon a cloud as big and dark as night appeared on the horizon, and Tommy Dunn, telegraph operator in the St. Paul & Duluth depot, received a message that Pokegama—now Brookpark—nine miles south on the line, was being destroyed by fire and most of its inhabitants burned to death.

As the great black cloud in the south bore on toward Hinckley, Douglass Greeley, proprietor of Hinckley's largest hotel, stood a moment on the porch to watch it, and to listen to a far-off roar that sounded like a great waterfall.

Just then Father Lawler, Catholic priest who had been working with the fire department, came running up the

main street, shouting: "Run for your lives! Run to the gravel pit, run to the river! Save yourselves!"

And then hell itself roared into Hinckley, riding the back of a rising hurricane. There was no time to save anything. Mothers snatched babies out of flour-barrel cradles and fled.

Over at the Hinckley *Enterprise*, Editor Angus Hay picked up his files and ran out into the street, a street suddenly lined with blazing houses. He noted two women down on the grass of the town hall, praying. "Run, run to the gravel pit!" he shouted. "Water is better than prayers right now." The women ran.

Many folks had been hurrying to the Eastern Minnesota Railroad depot where stood a passenger and a freight train. The trains were hastily coupled, with William Best and Ed Barry at the throttles of the two locomotives, and Conductor H. D. Powers in charge. Three boxcars, five coaches and a caboose made up the train.

The bells jangled to hurry the fleeing townspeople. Presently the depot itself began to burn brightly. And still they came—men, women and children, running for the train and screaming. The first person lifted aboard was John Hogan, a cripple, in his wheel chair. Then the women and children were piled into the train.

Now the paint was running down from the cars; the depot was a furnace. Engineer Best, thinking of the river bridge he would have to cross to get out of town, let go a blast on the whistle. With the bells ringing, both engineers pulled their throttles open and the train moved away from the blazing station.

A new and much greater hurricane of wind and fire swept in as the train steamed out of town, and Engineer Best watched Hinckley burn for a moment he never forgot. He saw men and women and horses and cows stagger in the street, then go down to stay. Fire leaped at the sides of houses, devouring them so quickly the buildings seemed to melt.

Now the train was running in the pitch darkness of smoke. Brakemen O. L. Beach and Peter McLaughlin wet themselves with water from the tank, then hung to the tender, one on each side, each with a lantern. Just after they crossed the Grindstone River bridge, already burning briskly, the brakemen heard shouts and screams in the smoke. They flagged down the train, and some forty-odd climbed aboard. The last to board the train, they brought the total passenger list to almost 500.

The train ran north to Sandstone, nine miles, with Beach and McLaughlin holding fast to their dangerous posts on the head-end, all but blinded. A brief stop was made at Sandstone depot, and passengers shouted to Sandstone folk, warning them that all hell was in the rear and traveling fast. Not one soul paid heed.

So the train moved on again, and soon approached the high bridge that spanned Kettle River. The bridge was seen to be afire, and the pilot brakeman flagged down, while they got out to consider. The old bridge watchman's body was beside the track, well-charred. The bridge was afire almost its entire length, but the brakemen thought it would hold. If it didn't—well, look what was coming behind them from the south. They gave Engineer Best the signal, then climbed onto the running boards again.

Slowly, carefully, the train clanked across Kettle River on a bridge of fire. Inside the cars women screamed as flames leaped into the shattered windows. The train made the far bank with almost two minutes to spare. The bridge then started to collapse, but the train was safely on its way to Superior.

Approximately twenty minutes after the train crossed Kettle River, the fire storm belched into Sandstone village and swept everything away, including forty-five persons.

Back in blazing Hinckley, Death was hunting out most of the remaining citizens. One hundred and twenty-seven of them took refuge in a swampy, cleared place—a sort of swale—along the Eastern Minnesota tracks, and there they

were burned to black crisp or gray-white ashes, every last one.

The only safe spot in Hinckley that day was the gravel pit, with its two acres of shallow water. Citizens had often complained of it as an eyesore and had damned the Eastern Minnesota Railroad for inflicting it on the town. But now the yawning pit and its stagnant water saved more than 100 persons, and many beasts; for horses and cows and dogs and cats, driven by instinct or knowledge, came unerringly to the one place where life could be sustained until the fearful tornado of fire had passed.

Those townspeople who did not leave on the train or go to the gravel pit were in for a tragic time. Some 200 of them had run north on the tracks of the St. Paul & Duluth road, while the ties smoked and burst into flames under their feet; and every few rods tongues of flame reached out to catch and stop first one, then two, then a dozen, until thirty-three had fallen on the rails and died there.

The survivors, those who still pressed on northward, soon felt the roadbed vibrating, and presently saw a headlight coming at them in the gloom. The train was No. 4, the Duluth Limited, on its way from the Iron Port to St. Paul . . . but it wasn't going to get there.

Jim Root, who had run a locomotive for General Sherman in Georgia, was in No. 4's cab. He was a man of small stature but vast staying powers. He saw the army of refugees running up the track toward him, and not far behind them a cloud of smoke that shut out everything beyond. He stopped his train and got down out of the cab. White-faced kids, well beyond whimpering, were helped aboard by women whose hair smelled of singeing and by men who had no eyebrows.

Engineer Root knew from what they told him that he could run no farther south. The nearest water was a swamp hole called Skunk Lake, six miles back. He climbed into his cab, reversed the lever, and opened the throttle.

Root looked out the cab window for one last glance at

Hinckley, lost now in a cloud blacker than the surrounding gloom, then turned to sit backward in his seat. Just then a terrific explosion somewhere outside shattered the window, and the flying glass made deep cuts in Root's neck and forehead. He had to keep wiping the blood out of his eyes. By the time the train got to moving, flames were racing ahead of it along both sides of the coaches. Root could see that even the far end of his train was afire.

In the chair car ahead, John Blair, Negro porter, was calming passengers and averting panic. Paint was running down the walls. The lamps had been lighted, but they were now smashed and blown out by explosions which broke almost every window. Blair stood by the water tank passing out cupfuls until the water was gone. He soothed children and adults alike.

Back in the cab, Jim Root wasn't doing so well, and had it not been for his fireman, Jack McGowan, things might have been worse. The heat in the cab was something men don't often live through. Not far out of Hinckley, Root fainted with his hand on the hot throttle. When he came to, he saw he had only ninety-five pounds of steam. The train was moving slowly. Root thought he must have instinctively started to shut the throttle when he fainted; it was half closed.

The day was darker than any night Root had ever seen, but a different kind of dark, streaked with fire that gave no light to see by. The passing scene on each side was mostly impenetrable gloom, with now and then a few stumps burning luridly. Root couldn't tell just where he was, for sure, but he didn't think he was at Skunk Lake yet. He pulled her wide open.

The curtains at the cab started blazing. McGowan doused them. Small flames ran along the cab woodwork, as if feeling it out, testing it, then burned brightly. The solder in the cab lamp trickled down. The wooden handles of the steam connections were afire and they turned coal-black when McGowan threw water on them.

McGowan threw water on Root. Then Root dipped both hands in the pail. They were puffed up, but he didn't dare rub them for fear the skin would come off. The fireman was in no better shape; but each time Root fell off the seat, McGowan picked him up and put him back. Then he threw water in his face. "Good," said Jim Root, "that's good."

The very coal in the tender was burning as in a grate when No. 4 groaned slowly across Skunk Lake bridge. Root shut off the steam. They could see the muddy water, its green scum showing red in the glare. Grabbing a pail, McGowan got down. He threw water on the flaming coach steps and platforms so the passengers could get out. Engineer Root was down and out on the floor of his cab.

The entire train broke into roaring flames the moment it stopped, and the refugees piled off. Men, women and children tumbled into the water-mud of the lake, some eighteen inches deep, where they sat with slime to their armpits and covered their heads with wet clothes when the reaching sheets of fire came over the pond.

Engineer Root lived it out. So did some 300 more who came to Skunk Lake.

While Hinckley was being destroyed, other communities in the region were in flames. Mission Creek, four miles south, was a company town built around a sawmill. The mill had shut down in August, and most of its employees had gone to the Dakotas to work in the harvest. The seventy-three men left in Mission City fought local brush fires, off and on, pretty much all through August. Then came that first day of September, when the mighty wind came in with a hot breath and the town went into darkness.

Presently every home in the village, the sawmill, and the company store and barns started burning at once. Ed Boyle, the mill owner, led the townspeople into a big potato patch where they lay for two hours while fire played over their heads. No one was lost here.

Fire entered the town of Pokegama in early afternoon, and in less than two hours the village had been wiped out. Twenty-three persons—one-fifth of the population—were burned to death.

At Sandstone, many persons saved their lives in the Kettle River which flows through the village. But the death toll here and in near-by homesteads totaled forty-seven.

At Partridge, a logging camp and the most northerly settlement in the fire area, all but one man were saved by taking refuge in a small lake. A heroine here was May Boyington, telegraph operator, who left her post only when the depot started to burn. The settlement was entirely consumed.

Refugees were still huddled in the mud of Skunk Lake and in the gravel pit when relief parties were forming all the way from Duluth to St. Paul and Minneapolis. By midnight, the parties were on their way.

All over Hinckley's black acres the dead were found and laid in long piles for identification. Horses and wagons came from Pine City, just beyond the edge of the fire, and the search for the dead went on. That small swamp just north of town proved to have been the most fatal spot of all; 127 bodies were found there. A few more floated in the Grindstone River.

By afternoon a load of lumber was brought in from Pine City and a crew of men began whacking up coffins. The bodies, many of them never identified, were placed in the boxes, and the boxes were piled into wagons and haystacks. Then the somber procession moved through the stumps and ashes to a field a mile east of the village. Here 248 were buried in trenches while priests and ministers performed simple rites.

The official death list of the September fires gave the dead as 418, including many who were never identified.

What started this fire that became such a tremendous sea of flames? As is the case with most great forest conflagrations, the cause and origin will never be known. But

it is not difficult to learn why the fire reached the proportions it did.

The soil of Pine County is rather light, originally covered with pine and spruce and some hardwoods. Logging and farm clearing had been going on at a rapid pace for almost twenty-five years before 1894. On the cutover lands were large accumulations of slash, or logging debris. Growing up around this slash were spruce and pine and poplar and white birch. There were also many thousands of acres of virgin spruce and pine.

The records of the Weather Bureau at St. Paul, less than eighty miles from the fire area, show that from May to September of 1894 the rainfall totaled but 2.20 inches—16 per cent of normal. For four months, only a few very light showers were reported. The temperature for the same four months showed an accumulated excess of 427 degrees—an average daily excess of 4.2 degrees above normal.

Such were the ground and weather conditions as August drew to a close. The necessary sparks had long been active, waiting for conditions to become exactly right. On July 15, section men along the Eastern Minnesota Railroad both north and south of Hinckley were fighting slash fires, grass fires and fires in second-growth timber that were threatening the right-of-way.

In mid-July, too, along the St. Paul & Duluth Railroad, hundreds of tons of hay had been burned near Mission Creek by fires that crept out of the woods; and the correspondent there of a St. Paul newspaper reported:

"The fires around here are spreading rapidly, and everything is dry as tinder. Unless a heavy rain comes soon there may be a great loss sustained."

It was one of those true prophets speaking, but not heard.

Twister on the Town

By Leonard Brown

ST. LOUIS, MO., May 27, 1896—There was warning, of a sort. The juxtaposition of certain planets promised ill events for St. Louis, announced an astrologer. The Weather Bureau in Washington issued a caution of its own. A handful of citizens may have heeded one or the other of these prophets, but the city at large was not prepared for the cataclysm of May 27, 1896.

At noon of that day, a Wednesday, the sky was overcast in the northwest. To old-time residents there was a dread familiarity about these curious cloud formations, light gray cumulus heaped up over dirty ranks of flying scud. There were some who knew the particular demon of the Mississippi Valley, and some remembered the evening of March 8, 1872, when a tornado had hit portions of the city. Those who remembered must have felt fear tightening in their chests.

Still no one cried a warning to the busy and teeming industrial port on the Mississippi.

By three o'clock everyone knew a storm was on its way. Wind velocity was increasing by the minute. On the river, moorings were strengthened, and deck cargo was made fast. In the city, storekeepers hoisted up their awnings. People began to take refuge indoors from the anticipated rain.

During the tense two hours which followed, lives could have been saved by an instant evacuation of the city. But no one was certain where the storm would strike, or if it would strike at all. People watched the array of clouds

moving toward the city, and said uneasily that the mounting wind surely would reach a limit, would blow itself out.

With each tick of the clock, time ran out, and the wind did not reach a limit. The shifting cloud mass pushed closer, turning a wicked, transparent green in color.

Five o'clock was zero hour for St. Louis. With an unprecedented suddenness the rain descended, two inches of it in a matter of minutes. Wind velocity gauges jammed at eighty miles an hour, and the first full fury of the storm was on the city.

The wind drove westward, throwing before it anything it could collect. Signs went flying. Tin roofs rolled up like bolts of yard goods. Streetcars tilted on their tracks and clumsily flopped over. The river began to heave up waves of a size never before seen.

The wind was in a hurry. It had an appointment in the suburbs.

In the lobby of a downtown hotel a group of businessmen comfortably sat out what they thought was a spring rain. A huge chimney crashing down through the skylight subjected them to a deadly shower of bricks and glass. The fashion then current of rearing brick façades a story above the roof of the building proper proved costly for many business establishments. The wind used these false fronts as a lever to wrench open the fronts of the buildings. It was as if nature's purpose was to expose man's fraud.

Gigantic bolts of lightning ripped down through the gloom, giving one witness the grotesque impression of "sunlight seen under water." Electric poles were toppling in the wind, and high-tension wires were whipping wildly around in the streets. Telegraph poles were "flashing columns of blue flame." The lightning got at the power plants and played havoc with the system. And through the roaring of the wind, the heavy voice of thunder spoke on and on.

For ten minutes the storm raged. At its fiercest, it

reached a velocity later estimated at 120 miles per hour. Joists, cornices, scaffolding, signs, trees and an endless skyful of shingles pelted the city.

Then, just when it seemed that the wind would grow in intensity until it wiped St. Louis off the map, there came an inexplicable lull. It was enough of a respite to permit people to draw a breath and thank their lucky stars that it hadn't been a tornado. The damage had been severe, and there were a number of injured, but it could have been worse.

Even while the city folk congratulated themselves on their deliverance, an old woman in a southwestern suburb died of fright as a tree, roots and all, dropped down through the roof of her home.

The tornado was on its way.

It showed its nature from the outset by poking its ugly spout into a small school, killing five children and injuring others. The bodies of the dead youngsters it took with it for a while, throwing them down far from the shattered building. It was a long time before they were found.

The spout moved on, snatching at roofs and outbuildings. It sniffed like a clumsy animal at a cluster of houses here, a barn there.

At the south side race track, the fifth had just been run. The spout nuzzled down, picked up a horse, carried the animal 100 yards and dumped it down a well. Then it started into town, followed the Mill Creek Valley, careening madly off course from time to time.

The Lafayette Park section of pleasant homes and verdant lawns was fair game. The tornado whipped its long tentacle among these houses, snatching at roofs and walls. With a kind of lunatic wit it clapped a ridiculously small roof on the open rafters of a large house. It tore chunks out of other houses and stuffed the openings with junk.

It hit the Compton Heights district, leaving debris in

its wake. In one residential section, it collected and demolished twenty-five pianos.

The city's institutions were in its path.

As if the occupants were not unfortunate enough, the poorhouse and the insane asylum were struck by the twister. The frightened cries of the old people and the gibbering fear of the mad were mingled with the crash of falling rubbish. Yet the storm was peculiarly merciful. None of the inmates was killed. Rescue work began at once, and among those most untiring and heroic in extricating the patients was an insane man.

The spout picked out the City Hospital for another test of its strength. The test was unfair, for the hospital had long been deemed a dangerously old structure. The building ripped easily. A rheumatic patient was lifted out of bed and lowered gently to the yard below, where he landed on his feet and hobbled to shelter, uninjured. Still the tornado was merciful. Only one killed at the City Hospital—unless you counted the Mexican woman who died of fright.

Impatiently the spout wrenched roofs from the Exposition Building, the armory, the Auditorium. St. Vincent's Hospital was badly damaged; churches were wrecked. The spout searched hungrily for prey.

In the older section of the city, where tenements were huddled together and crowded with workmen's families, it found what it was after. At Twelfth Street it settled down to do some serious killing, and from there to the levee it was ruthless.

Three men enjoying a friendly card game in a saloon were crushed and buried, while the saloonkeeper's wife, on the way to warn her husband, was herself killed. The broken body of a dead baby fell from the sky into a man's arms.

Some buildings were taken apart brick by brick, and the rubble heaped upon the screaming occupants. At the intersection of Seventh and Rutger, the tornado flattened

a tenement housing more than twenty persons. Only a mound of bricks was left. From this corner to Soulard, and over to Eighth and Broadway, the loss of life was the worst in the city.

It did no good to seek shelter from the spout. A group of fugitives who huddled in an old brick market building learned this when the twister pushed the walls in on them.

It left no building in its path unmarked, and its path seemed to be everywhere. Yet for some reason it overlooked the high buildings of the business district as it whipped on toward the river. Warehouses were broken into, and their contents passed out in a welter of flying splinters. Car barns were made a shambles. A gas storage tank was overturned, and its contents instantly ignited to burn off harmlessly. Another tank was flattened.

A livery stable which stored carriages in its loft was hit. The loft was removed; all of the carriages but one were hurled yards away. The exception was an ornate black hearse which sat high in the wreckage of the building, mocking the tragedy at hand.

The spout swung wide and then veered out onto the river. A million dollars' worth of shipping stood at St. Louis. The packet captains, the pilots, and the wharfboat men were powerless to help themselves, much less save their ships. The proud packets were torn apart and their hulls flung senselessly across to the Illinois side. Some sixteen steamers, five ferryboats, two transfer boats, six tugs were demolished with the lesser craft.

The *Bald Eagle*, *Dolphin No. 2*, *Belle of Calhoun*, *D. H. Pike*, and others blew their boilers or turned turtle, drowning many of their passengers and crews. On the Illinois side, a steam launch, *Austria*, was lifted from her moorings into the air, turned upside down, and dropped to float twenty feet from her berth. An amazing number of people on these ships escaped what appeared to be certain death.

Once across the river, the twister slammed out at the

famed Eads Bridge, double-decked railroad and vehicle link with the west. Only the foresight of its designer, who had been criticized for adding a million dollars to its cost in anticipation of such an emergency, saved the structure. The spout knocked several freight cars down to the vehicle deck, but spared a stalled passenger train which it could easily have pushed into the river. It clutched and bore off great chunks of masonry along the eastern approaches to the bridge, and tore up track for several hundred yards.

Before finishing with the Eads Bridge, the tornado left its calling card. A pine plank was later found driven through a three-eighths-inch iron girder.

At about 5:30, after smashing about the waterfront on the east bank of the river, the tornado began a sickening duplication of its destruction in the sister city, East St. Louis. Curiously enough, it followed the approximate path of the previous twister of 1872. It demolished warehouses, grain elevators, business establishments, hotels and homes. It did the same terribly thorough job, and then wandered out into the countryside.

The worst was over.

After a few minutes' lull, a brisk twenty-five-mile gale whipped across St. Louis, but it passed almost unnoticed.

Along the seven-mile route of destruction, numerous fires had broken out. The litter in the streets made it impossible to move fire-fighting equipment. A number of those trapped in the wreckage died in agony before a charitable downpour of rain extinguished the flames.

The electrical supply had broken down. Of all the transit lines in the city, only one cable-car route was still in operation. The telephone service was out.

Office and factory workers picked their way home through the clogged streets, no one knowing what to expect when he got home.

The city was in total darkness; even the moon was covered by a conspiracy of clouds. Nonetheless, the rescue work was begun. Digging the injured out of the wreckage

was an endless problem. An even worse problem was what to do with them. The battered hospitals somehow made room for the most seriously hurt.

The homeless were another problem. And the vulnerability of a distraught and darkened city made looters still another problem.

Somehow a message pleading for help was put through to the outside world, and soon relief was on the way. St. Louis struggled through the black and trying night. On Thursday, martial law was declared. Newspapermen and curiosity seekers thronged in. One by one the dead were uncovered and sent to the morgue to await identification.

Counting the cost of the calamity was hard, but by Friday it was known that about 250 had been killed in St. Louis, more than 1,200 injured, and 5,000 left homeless. Across the river in East St. Louis, the toll was roughly proportionate, with 150 known dead. Property damage was estimated at between twelve and thirteen million dollars, only a small share of which was covered by tornado insurance.

The only cheer in the gloomy appraisal came when the crowded excursion steamer, *Grand Republic*, thought lost, steamed safely into harbor.

St. Louis rolled up its sleeves and got to work.

The Galveston Tidal Wave

By Edwin Muller

GALVESTON, TEX., September 8, 1900—That first week in September everybody went sea-bathing on Galveston Beach, Texas. There'd never been such a fine surf—great rolling combers that swept in from the Gulf. Yet there was hardly a breath of wind.

A blanket of humid heat lay over the city. Storm warnings went out to the Gulf shipping. The barometer was falling. Those signs should have been of concern to the inhabitants of a town built on a sandbar scarcely more than a mile wide and only nine feet above the sea at its highest point. But nobody seemed to be worried. Scientists had said that the city was safe from storm and flood, that the long gentle slope of the sea bottom would protect them.

Life was comfortable and prosperous in Galveston in the year 1900. It was a typical American community, the fastest growing port on the Atlantic and Gulf seaboard, exporting each year millions of dollars' worth of cotton and grain. Even in this comparatively dull season many big steamers were anchored in the bay or lay alongside the wharves. The city boosters talked confidently of the day when Galveston would rank with New York or any other port.

On Friday afternoon of that week the sea-bathing had to be stopped—the surf was becoming too dangerous. Still

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there was no wind. The surface of the Gulf was smooth, gray satin lined with streaks of foam. The massive ground swells came at long intervals, sometimes of a minute or more, but when they came, they raced in at express-train speed and broke on the sand in reverberating thunder. The older inhabitants, the ones who could remember the big storm of 1875, began to study the sky toward the southeast, toward the Caribbean where, in the doldrums, hurricanes are born. Some of them noticed a white, misty patch above the horizon.

At 2:00 A.M. on Saturday, September 8, the wind began to blow.

By the time the city awoke at its usual hour there was half a gale and it was increasing steadily. But after breakfast businessmen went downtown as usual. There seemed to be nothing to worry about—this wind was from the north, the side of the mainland and the shallow bay.

Nevertheless, as the day went on, nerves began to wear thin. No one could remember a wind that increased with such steady relentlessness—thirty, thirty-five, forty miles an hour and not a minute of let-up. With it came a driving rain that grew in intensity with the wind. Water was piling up against the wharves, licking at the big grain elevators and warehouses on the north side of the island. And, inexplicably, it was rising on the Gulf side as well, where the residence section spread down to the beaches. It crept up, slowly at first, past the highest flood marks, reaching toward the streets and houses.

People began to phone the local Weather Bureau. Then, when the wires were continually busy, they began to go there, at first in scores, then in hundreds. What they heard was most disturbing: this was a West Indian hurricane of the most dangerous kind, a mass of air whirling at tornado speed in a circle several hundred miles in diameter, advancing steadily across the sea. It had veered away from the tip of Florida, crossed the Gulf in a long curve and was

headed straight for Galveston. Everyone on the Gulf side should abandon his house and move to the highest ground and the strongest buildings. There was much worse to come.

Galveston began to be frightened. The velocity of the wind was now more than fifty miles per hour. A whistling sound could be heard above its deep, vibrating hum. Those in the streets had to shout to others close at hand. The rain cut like a knife, struck the sides of buildings with the force of solid shot. Some took the advice and evacuated their homes. Others decided to wait.

People were scared but not yet in a panic. They were still a community. Measures would be taken by those in authority.

But by early afternoon there was a sense of impending catastrophe.

Groups of people were seen hurrying through the streets carrying suitcases and bundles hastily tied together. The Tremont was the largest hotel in the business district, the higher section of town. Its lobby began to fill with frightened refugees. They said that water was already in the lower streets, that houses had begun to go, that the big Beach Hotel and Bathing Pavilion were breaking to pieces under the twenty-foot waves pounding the shore. One of the bridges connecting the city with the mainland had been washed away, the others couldn't last long.

By 3:00 P.M. half the city was under water. At first it crept up slowly, covering the residential section block by block. Then it came faster, in great surges. The lower streets were swift-flowing streams, the water seethed and rushed at the foundations of the houses. Men struggled against the current through waist-deep water, leading mules on which they had set their wives and children. Everywhere was the explosive sound of windows smashing in, heard above the noise of the wind that was like the deep roll of a great drum. The water supply failed. So did the electric light plant. Although night was still far off, the

city was almost dark, the driving rain cutting off visibility.

Everywhere morale began to fall. The crowd huddled in the Tremont lobby saw and felt the walls vibrate. Every few minutes an announcement was made as to the depth of the water outside. Still rising. With each announcement the hysteria grew. At last water came through the door, spreading a widening pool over the lobby floor. The crowd fought its way up the stairs, filling the mezzanine, praying and moaning.

No one could escape from the city. The mainland was two miles away, across an expanse of wild water which no boat could survive. All four bridges were down. Men, women and children crouched in their houses, staying close to the walls because that was the safest place if the roof came down. Houses were collapsing, people were dying. No one knew how many, no one knew when his own turn would come. The wind blew on—and on—and on. It would never stop.

Then, quite suddenly, it did stop.

At 8:00 P.M. the wind slackened. Within a few minutes there was an almost dead calm. Men looked at each other and thanked God—churchgoers and saloon-goers alike. But not those who understood the nature of a circular hurricane, the calm center inside the whirling periphery. When, within the hour, the wind began again—from the southeast now—it was the real thing. It quickly passed the record of the afternoon. The Weather Bureau recorded eighty-four miles an hour; then the instrument blew away. It was estimated later that the wind attained a velocity of 120 miles. It built up the accumulated volume and momentum of an avalanche, it struck with the concussion of a great explosion. Trees were uprooted and driven through the walls of houses. Solid masses of salt water were blown across the island, choking those who were still outdoors fighting their way to shelter.

The noise of the wind was so great that no other sound

could be heard. One man, looking out of a window, saw a large house collapse across the street. He saw the timbers rend, the roof and walls come smashing down. But he heard no sound of it.

Now the waters had risen so that they covered every square foot of the island. Even the highest part was three to four feet under water. The streets were full of floating wreckage. Masses of it were battered by great waves against the walls of houses still standing, bringing them down in their turn. It was dangerous to stand near a window, even on the leeward side of a house. One man who did so was sucked out bodily, hurled to death.

Those who had stayed in their homes in the lower part of the island were now trapped. If they stayed in, more likely than not the house would collapse and bury them. If they tried to escape outdoors on floating wreckage they'd be lucky to live a minute. Solid timbers were blown through the streets. Most deadly were the slates blown off the roofs. They filled the air like clouds of feathers in a gale. Bodies were found later with the tops of the heads cut cleanly off by these slates.

Now organized society itself was going to pieces. The storm had torn apart the ties of civilization that bind men together. It had isolated them one from the other. Galveston was no longer a community, it had disintegrated into a thousand individual battles with death. Men react in different ways to great catastrophes. Some battled for their lives with the brutal selfishness of animals, fighting each other for preferred places on floating wreckage, clambering up into the branches of floating trees and kicking down others who tried to follow them. Others risked their lives to make rescues.

The Catholic orphan asylum began to cave in. Each of the Sisters took ropes and tied eight infants to her. Each in turn said a prayer and launched herself on the current. A few were saved but more were found dead after the storm, still tied together.

Mr. Cline of the Weather Bureau had stuck to his post until late in the day, then had struggled home to find his family. They were in the house, a solid structure in what was thought to be a comparatively safe locality. He left them on the upper floor and went down to the front door. There he stayed for hours, making frequent sorties out into the swift current to bring in refugees. Eventually fifty were gathered under his roof.

But the house began to be battered by heavy masses of timbers, driven by the wind and waves. Quite suddenly it collapsed.

Of the fifty in the house, thirty-two were killed. Cline never saw his wife again—she was one of the thirty-two. He clutched his two young children, was overwhelmed by the water, lost consciousness for an instant. He came to, still clutching the children, when his head struck a timber. He managed to drag the children to the top of a floating pile of wreckage. For two hours he saw no homes, no land, only the waves around him. He thought he had been carried far out to sea, as hundreds had been. But at last the raft grounded and, struggling from one pile of wreckage to another, he got the children to safe shelter in a house on higher land.

Death and destruction rose to a final crescendo in the dark hours before midnight. At that period the separate units of disaster grew larger. Those who had fled their own houses in the lower districts but had not gone to higher ground had collected in the larger buildings, the churches and the schools. Now many of these went down. Church walls caved in, killing fifty at a time. The largest school was destroyed. A hospital with 100 patients collapsed, and of the patients and the staff, only eight survived.

The end came soon after midnight. The wind slackened—a little at first, then rapidly. The water went down very quickly too. In a few hours there were only scattered pools of it left.

At dawn the survivors crept out of doors. The streets were almost impassable, masses of wreckage and tangled wires.

No one knew how many were dead. No one knows today, but most estimates agree that, of a population of 38,000, 6,000 had died.

The survivors were stunned, incoherent. During that night there was not a man or woman who had not come close to the borderline of insanity. Many had gone over it. Now, in the early morning light, half-clothed people wandered aimlessly in the streets, screaming. Others sat quietly in the slime, laughing to themselves. Some who had held up bravely through the night collapsed now that the strain was over.

For most there was nothing to eat, no water to drink. No one could escape from the island.

At first there was no organized effort, but soon the disciplined habits of civilization began to reassert themselves. A meeting of citizens was called at 9:00 A.M., committees for each district were set up, those who had been accustomed to lead in the past took the lead now. Plans were set in motion to repair the water and electric plants, to send boats to the mainland for help, to improvise shelter for the homeless. They set themselves to the task of the decent burial of their dead. But presently this recovery of organized society had a setback, a setback almost as terrorizing as the storm.

There were 6,000 dead bodies. There were more than that number of carcasses of horses and cattle, their bodies bloated, the legs sticking stiffly up. The sun shone down. Corpses turned black, soon lost all likeness to human beings. The stench was incredible. Vast armies of flies settled down and the buzzards gathered in the sky.

Again panic gripped Galveston. As many people as possible were sent to the mainland, but only a very small fraction of the population could be so transported. The others

were still trapped, confined to their narrow island, with certain pestilence coming.

The plans for a decent burial were discarded. At first the authorities tried to dispose of the corpses in the sea, but this method of disposal did not prove altogether effective. Many of the bodies washed back to shore. So did some of the corpses from the graveyards.

It was decided to burn the bodies. They were piled up where they were found, covered with wreckage and cremated.

All corpses were treated alike, whether they were those of longshoremen or of prominent citizens. Men found themselves dealing with the bodies of people they had known, of men they had worked for, of relatives and friends. One man worked long and hard with burial parties, showing neither fatigue nor emotion. Only, whenever a new body was found, he would rush to it and open the mouth. He hoped to recognize his dead wife by her dental work.

The looting of bodies and of stores began on the day after the storm. To the looters already in town were added many who came from the mainland, securing transportation by claiming to belong to relief parties. Several men were found with their pockets bulging with human fingers—the corpses were too swollen for the rings to come off. Martial law was declared on Tuesday.

Those were grim weeks in Galveston. Men worked day and night—not looking ahead, just striving desperately to keep ahead of the things that had to be done at once—to establish law and order, to insure sanitation, to clean up the muck, to get food and water and shelter. Help came from outside. Relief contributions were sent from every part of the country—food and tents and medical supplies. But most of the work had to be done by the men and women of Galveston.

Then came the question of the future. To some the task looked too hard to tackle. They advised that the 32,000

survivors should abandon their sand-bar and make new lives for themselves on the mainland. But in its first edition after the flood the *Galveston News* carried the banner: "Galveston Shall Rise Again." That was the decision of the community of Galveston.

The citizens set themselves a ten-year program of hard work and self-denial. They adopted a commission form of government—the first American city to do so—because that seemed the most efficient way to get things done. They began to rebuild the city and to defend it from future attacks.

Galveston today is prosperous and comfortable. The great Sea Wall, costing more than a million dollars, runs for seven and a half miles along the Gulf, seventeen feet above the tide. It has had its test. In 1915 came another hurricane, almost as violent as that of 1900. This time only twelve lives were lost in Galveston and the property damage was comparatively small.

The Iroquois Theater Fire

By Eddie Foy and Alvin F. Harlow

CHICAGO, ILL., December 30, 1903—In 1903, I opened what was destined to be the most memorable engagement in my history. Klaw & Erlanger had recently started to import the big Drury Lane pantomimes from London, giving them an American farcical touch and additional lavishness. One of the first of these extravaganzas was *Mr. Bluebeard*, which opened the new Iroquois Theater in Chicago on November 23.

The theater was one of the finest that had yet been built in this country—a palace of marble and plate glass, plush and mahogany and gilding. It had a magnificent promenade foyer, like an old-world palace hall, with a ceiling sixty feet from the floor and grand staircases ascending on either side. Backstage it was easily the most commodious playhouse I had ever seen.

A vast expanse of dressing rooms was provided under the stage and auditorium for the chorus, and the principals dressed on the stage level or above. The flies were reached by elevators. The theater was hailed as the last word in efficiency, convenience and safety. Instead, it proved to be a fool's paradise. There had been no great theater disaster in this country for many years, and all safety precautions had been greatly relaxed.

We drew big crowds all through Christmas week. On Wednesday afternoon, December 30, at the bargain-price matinee, the house was packed and many were standing. I

Excerpted from the book Clowning Through Life, published at \$3.00 by E. P. Dutton & Co., New York, N. Y.; copyright 1928 by Dutton.

wasn't able to get passes for my wife and youngsters, so I decided to take only the oldest boy, Bryan, aged six, to the show and stow him wherever I could. I tried to get a seat for him down in front, but there were none left, so I put him on a little stool in the first entrance to the right of the stage—a sort of alcove near the switchboard; and he liked that even better than being down in the auditorium.

It struck me as I looked out over the crowd during the first act that I had never before seen so many women and children in an audience. There were several parties of girls in their teens. Teachers, college and high-school students on vacation were present in great numbers.

The house seated more than 1,600, and the managers declared afterward that they had sold about a hundred standing-room tickets, which would bring the total attendance to well over 1,700. The testimony of others seemed to indicate, however, that there were many more standees than the management admitted; in fact, it was widely believed that there were more than 2,000 people in the house that afternoon. And back of the curtain, counting the members of the company, stage hands and others, there were fully 400 more. The quantity of scenery, costumes and properties required for a spectacle like *Mr. Bluebeard* was prodigious, and a big staff of men and women was necessary to take care of it.

Much of the scenery was of a very flimsy character. Hanging suspended by a forest of ropes above the stage and so close together that they were well-nigh touching each other were no less than 280 drops, several of which were necessary to each set. All of them were painted with oil colors; the great majority were cut into delicate lacery and some were made of sheer gauze.

There had been a fire in the scenery during our engagement in Cleveland, but by a piece of luck it was quickly squelched; and I had been playing in theaters for so long without any trouble from fire that the incident hadn't

given me much of a scare. It takes a disaster to make one cautious. After our experience at the Iroquois, not one in ten of us actors (and I daresay other people would have been equally heedless) could remember whether we had ever seen any fire extinguishers, fire hoses, axes or other apparatus back of the stage.

The play went merrily through the first act. At the beginning of the second act a double octette—eight men and eight women—had a very pretty number called "In the Pale Moonlight." The stage was flooded with bluish light while they sang and danced. It was then that the trouble began. In spite of some slight conflict of opinion, there can be no doubt that one of the big lights high up at one side of the stage blew a fuse. That was what had caused the Cleveland blaze, and the company's electricians knew that in order to obtain the desired lighting effects they were carrying much too heavy a load on their wires. At any rate, a bit of the gauzy drapery caught fire at the right of the stage, some twelve or fifteen feet above the floor.

I was to come on in a few minutes for my turn with a comic elephant, and was in my dressing room making up. When I heard a commotion outside, my first thought was: "I wonder if they're having a fight down there again"—for there had been a row a few days before among the supers and stage hands. But the noise swelled in volume, and suddenly I became frightened. I jerked my door open, and instantly knew that something was deadly wrong. It could be nothing but fire! My first thought was of Bryan, and I ran downstairs and around into the wings. Probably not forty seconds had elapsed since I'd heard the first commotion—but already the terror was beginning.

When the blaze was first discovered, two stage hands tried to extinguish it. One of them strove to beat it out with a stick or a piece of canvas, but it was too far above his head. Then he got a fire extinguisher consisting of a small tin tube of powder and tried to throw the stuff on

the flames. It was ridiculously inadequate. If there were any of those large fire extinguishers which throw liquid chemicals from a hose, nobody seemed to find them or to think of them. Meanwhile, in the audience, those far around on the opposite side and especially those near the stage could see the blaze and the men fighting it, and they began to get frightened.

The flames spread through those tinder-like fabrics with terrible rapidity. If the drop first ignited could have been instantly separated from the others, the calamity might have been averted; but that was impossible. Within a minute the flame was beyond possibility of control by anything but a fire hose. Probably not even a big fire extinguisher could have stopped it by then. Why no attempt was made to use any such apparatus, or whether, indeed, it was in working order, I don't know. If the house force had ever had any fire drills, there was no evidence of it in their actions. The stage manager was absent at the moment, and several stage hands were in a saloon across the street. No one had even taken the trouble to see that a fire alarm box was located on or near the theater, and a stage hand ran all the way to South Water Street to turn in the alarm.

As I ran around back of the rear drop, I could hear the murmur of excitement growing in the audience. Somebody had of course yelled "Fire!"—there is almost always a fool of that species in an audience; and there are always hundreds of people who go crazy the moment they hear the word. I ran around into the wings, shouting for Bryan. The lower borders on that side were all aflame, and the blaze was leaping up into the flies. On the stage those brave boys and girls, bless them, were still singing and doing their steps, though the girls' voices were beginning to falter a little.

I found my boy in his place, though he was getting frightened. I seized him and started toward the rear. But all those women and children out in front haunted me—

the hundreds of little ones who would be helpless, trodden under foot in a panic. I must do what I could to save them!

I tossed Bryan into the arms of a stage hand, crying "Take my boy out!" I paused a moment to watch him running toward the rear doors; then I turned and ran out on the stage, right through the ranks of the octette, still tremblingly doing their part, though the scenery was blazing over them; but as I reached the footlights one of the girls fainted, and a man picked her up and carried her off.

I was a grotesque figure to come before an audience on so serious an occasion—I wore tights and comic shoes, a short smock, and a wig with a ridiculous little pigtail curving upward from the back of my head. The crowd was beginning to surge toward the doors and already showing signs of a stampede. Those on the lower floor were not so badly frightened as those in the more dangerous balcony and gallery. Up there they were falling into panic.

I began shouting at the top of my voice, "Don't get excited. There's no danger. Take it easy!" And to Dillea, the orchestra leader, "Play, start an overture—anything! But play!" Some of his musicians were fleeing, but a few, and especially a fat little violinist, stuck nobly.

"Take your time, folks. (Wonder if that man got out with Bryan?) No danger!" And sideways into the wings, "The asbestos curtain! For God's sake, doesn't anybody know how to lower the curtain? Go slow, people! You'll get out!"

I stood perfectly still, hoping my apparent calm would have an equally calming effect on the crowd. Those on the lower floor heard me and seemed somewhat reassured. But up above, and especially in the gallery, they had gone mad.

Down came the curtain slowly, two-thirds of the way—and stopped, one end higher than the other, caught on a wire. Then the strong draft coming through the back doors by which the company was fleeing bellied the slack

of it in a wide arc out into the auditorium, letting the draft and flame through at its sides.

"Lower it! Cut the wire!" I yelled. "Don't be frightened, folks! Go slow! No danger! Play, Dillea!" Below me Dillea was still swinging his baton and that brave, fat little violinist was still fiddling alone and furiously; but no one could hear him now, for the roar of the flames was added to the roar of the mob. In the upper tiers they were in a mad, animal-like stampede—their screams, groans and snarls, the scuffle of thousands of feet and bodies grinding against bodies merging into a crescendo that was half-wail, half-roar—the most dreadful sound that ever assailed human ears.

Then came a cyclonic blast of fire from the stage out into the auditorium—probably a great mass of scenery suddenly ignited and fanned by a stronger gust—a flash and a roar as when a heap of loose powder is fired all at once. A huge billow of flame leaped out past me and over me and seemed to reach even to the balconies. Some of the audience later described it as an "explosion" or "a great ball of fire." A shower of blazing fragments set my wig smouldering. The fringe on the edge of the curtain just above my head was burning, and as I glanced up, the curtain itself was disintegrating.

By now the last of the musicians had fled. I could do nothing more, and might as well go, too. But the inferno behind me was so terrible that I wondered whether I could escape that way; perhaps it would be better to leave through the auditorium. But Bryan had gone out by the rear—if he had gone at all—and I was irresistibly drawn to follow.

I fairly had to grope my way through flame and smoke to reach the Dearborn Street stage door, which was still jammed with people getting out. The actors and stage employees nearly all escaped—saved by the failure of the asbestos curtain to come down, which let the bulk of the

flame roll out into the auditorium and brought death to many in the audience.

The flying ballet went out as I did, rescued by the heroism of the elevator boy, who ran his car up through tips of flame into the flies where they stood awaiting their turn, and brought them down. But one of them was so badly burned that she died in a hospital a day or two later. Some of the people dressing under the stage broke down doors or escaped through coal chutes.

As I left the stage the last of the ropes holding up the drops burned through, and with them the whole loft collapsed with a terrifying crash, bringing down tons of burning material. With that, all the lights in the house went out and another great balloon of flame leaped out into the auditorium, licking even the ceiling and killing scores who had not yet succeeded in escaping from the gallery.

The horror in the auditorium was beyond all description. There were thirty exits, but few of them were marked by lights; some had heavy portieres over the doors, and some of the doors themselves were locked or fastened with levers which no one knew how to work.

It was said that some of the exit doors leading from the upper tiers onto the fire escapes on the alley between Randolph and Lake streets were either rusted or frozen. They were finally burst open, but precious moments had been lost—moments which meant death for many behind those doors. The fire-escape ladders could not accommodate the crowd, and many fell or jumped to death on the pavement below. Some were not killed only because they landed on the cushion of bodies of those who had gone before.

When one balcony exit was opened, those who surged out on the platform found that they could not descend the steps because flames were leaping from the exit below them. Painters in a building across a narrow court threw a ladder over to the platform; a man started crawling over

it, but one end slipped off the icy landing and he fell, crushed on the stones below.

The painters then succeeded in bridging the gap with a plank, and just twelve people crossed that narrow footpath to safety. The twelfth was pursued by a tongue of flame which dashed against the wall of the opposite building—and no more escaped. The iron platform was crowded with women and children. Some died there; others crawled over the railing and fell to the pavement.

But it was inside the house that the greatest loss of life occurred, especially on the stairways leading down from the second balcony. Here most of the dead were trampled or smothered, though many jumped or fell over the balustrade to the floor of the foyer. In places on the stairways, particularly where a turn caused a jam, bodies were piled seven or eight feet deep. Firemen and police confronted a sickening task in disentangling them. An occasional living person was found in the heaps, but most of these were terribly injured. The heel prints on the dead faces mutely testified to the cruel fact that human animals stricken by terror are as mad and ruthless as stampeding cattle. Many bodies had the clothes torn from them, and some had the flesh trodden from their bones.

Never elsewhere had a great fire disaster occurred so quickly. From the start of the fire until all in the audience either escaped, died, or lay maimed in the halls and alleys, took just eight minutes. In that eight minutes more than 500 perished.

The fire department arrived quickly after the alarm and extinguished the flames in the auditorium so promptly that no more than the plush upholstery was burned off the seats. But when a fire chief thrust his head through a side exit and shouted, "Is anybody alive in here?" no one answered. The few who were not dead were insensible or dying. Within ten minutes from the beginning of the fire, bodies were being laid in rows on the sidewalks, and all the ambulances and dead-wagons in the city could not

keep up with the ghastly harvest. Within twenty-four hours, Chicago knew that at least 587 were dead, and many more injured. Subsequent deaths among the injured brought the list up to 602.

As I rushed out of the theater, I could think of nothing but my boy. I became more and more frightened; as I neared the street I was certain he hadn't gotten out. But when I reached the sidewalk, God be praised, there he was with his faithful friend just outside the door. I seized him in my arms and turned toward my hotel.

It was a thinly clad mob which poured out of the stage doors into the snow. The temperature was near zero, and an icy gale was howling through the streets. Some of the chorus girls were compelled to run out almost nude, but kindly people put wraps around them and took them into near-by buildings for refuge.

My own outfit of tights and thin smock felt like nothing at all, and my teeth were chattering so from the cold and the horror of what I had just been through that I could not speak. A well-dressed stranger stopped me and said, "My friend, you'd better take my overcoat," throwing off his heavy coat as he spoke and helping me to put it on. Then he picked up Bryan and walked with me across the street—and there, hurrying towards the theater, I saw my wife.

She screamed at sight of me and crying, "Oh, thank God, thank God!" she threw herself into my arms. Then she seized Bryan and kissed him over and over.

I had no sleep at all that night. Newspaper reporters begged me for interviews, friends called me by telephone and wired me. I was too excited for sleep, anyhow; my nerves did not subside to normal for weeks afterward.

The Iroquois Theater disaster brought a serious reaction in the theatrical profession. On the day after the fire every theater in Chicago was closed, and they remained closed for some time while city authorities investigated their safety.

New York and other cities also began closing theaters suspected of being unsafe.

A New York newspaper a few days later listed more than fifty companies which had closed their season's run; and counting vaudeville and burlesque players, some 15,000 people were idle.

But the terrible lesson was sadly needed. In New York at that very moment, some Broadway theaters had wooden stairways and aisles so narrow that not more than one person could pass through them at a time. The matter of exits had been given little attention; there were basement dressing rooms reached by stairways little better than ladders, where actors would be caught like rats in a trap in case of fire.

The Chicago horror was a blessing in one respect—it brought about a countrywide investigation and house-cleaning. Theaters in some cities were declared hopeless firetraps and permanently closed. Others were compelled to make costly repairs. Stringent ordinances regarding exits were passed and enforced.

Since that terrible afternoon of December 30, 1903, America's theaters have been safer than they ever had been before. There are still occasional hazards and violations of safety laws, but another disaster like the horrible one I witnessed in the ill-fated Iroquois Theater is at least improbable, if not entirely impossible.

Holiday Holocaust

By Victor Boesen

EAST RIVER, N.Y., June 15, 1904—The parade of children with their parents and relatives trooped gaily toward the East River where the big boat was anchored which would take them on their annual outing. St. Mark's pastor, the Rev. G. F. C. Haas, headed the laughing procession, and behind him marched the band playing a medley of lively airs.

At the pier they were joined by additional oldsters, glad of an opportunity to escape to the country for a day. The *General Slocum*, veteran of thirteen years and one of New York's fastest ships, settled to her normal draft as 1,358 persons overspread her spacious decks. Four hundred of these were children, including St. Mark's kindergarten. The rest were predominantly women.

It was good to be alive. The exuberance of the youngsters was infectious. But there was also the tonic of spring. Not a speck of cloud appeared in the sky on that 15th day of June, 1904.

The band settled in chairs up forward and Pastor Haas, whose own family was aboard, moved beamingly about to see that everyone was comfortable. Then he gave the signal to Captain W. H. Schaick in the pilot house. The lines were cast off, and soon the great vessel was puffing north among the tall buildings, her huge paddle wheels beating the river into a muddy chaos.

It was just as the ship passed opposite Eighty-Third

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Street that fourteen-year-old Frank Perditsky spied a thin column of smoke curling from the storeroom in the hold. He ran to the pilot house and shouted this information to Captain Schaick. "Shut up and mind your own business!" the captain is recorded to have said.

A quarter of a mile farther, the skipper of a dredge working in the river saw a puff of smoke break from the *Slocum's* lower deck. He blew four sharp blasts of his whistle. His signal was caught up by other craft, and as each sounded the warning it fell in behind the steamer, seeking to overtake her.

But there was no slackening of the big ship's speed. At 110th Street, many precious minutes later, a member of St. Mark's congregation was startled by smoke belching from the companionway of the forecastle. Calling a deck-hand's attention to it, he hurried to tell Captain Schaick, who summoned Mate Edward Flanagan to go below and investigate.

Meanwhile, another boy had seen the flames and was tugging at the arm of a crewman disporting himself at the bar. Reluctantly reeling to the scene of the blaze, the man studied it curiously—then *threw on a bag of charcoal*.

As the crew member stood groggily watching the inevitable result, Mate Flanagan appeared. By the time he reported to the captain through the speaking tube, the fire had eaten through the partition into the engine room.

Captain Schaick, who had hoped to keep the situation concealed from the passengers, sounded the alarm gong. At that moment, a woman on an upper deck ran screaming for help, her clothing aflame with a burst of fire that had darted up at her through a chute. These cries, combined with the ominous notes of the fire gong, brought a dramatic stillness throughout the vessel.

The passengers looked at one another in horror, then broke in a wild stampede to find their children. In the first moments of that awful scramble, dozens were trampled to insensibility.

There were many places where the ship could be beached or pulled alongside a dock, but Captain Schaick chose to make a run for the shoals off distant Riker's Island. Unheeding as a sleepwalker, the hell ship kept to her course.

Mate Flanagan and a half dozen fumbling deckhands got out the fire hose, but with the force of the water it parted all along its length. They made no further effort to control the spreading inferno, but fled for safety, knocking down passengers who got in their way.

Three minutes after Captain Schaick had acknowledged the fire, a column of flame and smoke had vaulted thirty feet above the pilot house. Passengers were trapped forward, aft and below. Those on the aftdecks were lashed by flames bent backward under pressure of a headwind fanned by the fifteen-mile-an-hour speed of the ship.

Engineer Frank Conklin, with fire licking at his clothing, was driven from his post in the engine room, leaving no one to heed the signals from the pilot house. The coal passers stuck a few minutes more before joining the mad rush for life. The vessel was now running wild, a flame-sheeted monster with Death the engineer.

Screaming humanity swathed in fire began leaping into the river from all parts of the vessel. Three little girls, human torches, went overboard together. Some halted at the rails, fearing the water more than the fire. The pursuing tugs fell farther behind as they stopped to rescue victims.

Still the blazing ship kept to her course, her boilers fed by burning decks.

Passengers tore at the life preservers, fastened to the walls with wire, only to have them fall apart. Granulated cork spilled through their rotted covers and sifted down onto the river where it strangled victims gasping for air. The few who managed to put on the jackets sank on hitting the water.

Crowds jammed against the ten lifeboats, inadequate to

accommodate all even had they been accessible, but these, too, were lashed on with wire.

Suddenly a long moan went up—the supplication of the doomed confronted by a vision of hope. The trim yacht *Candida* came down the river dead ahead. Imploring women held out their babies. Men shouted hoarsely for it to come alongside. But the craft wheeled away in a wide detour. Her skipper explained later he thought it best to keep clear of the tugs and send a launch from a distance.

Women fell on their knees before the pilot house and beseeched the determined captain in the name of God to stop. Men cursed him. One father, crazed by the loss of his child, drew a revolver and fired at Schaick, but missed.

Suddenly all three decks collapsed in a cloud of smoke and sparks, trapping hundreds in their infernal embrace. Those who died quickly were fortunate. A hundred more slid off into the river.

Nature's law of replacement asserted itself when a new life was born to this world of flame. A few smoke-laden gasps and the baby was dead.

As the ship headed across the channel between Riker's and North Brother islands, it struck a rock and began to sink. Up to now everything had been done wrong. But at last the insane flight was ended, allowing the pursuing craft to catch up. These quickly formed a circle about the ship while a fireboat reduced the flames to smoke.

Tugmen climbed aboard and began passing the survivors over the rail. In those final moments, a young shout rose above the hiss of the smoldering embers. People saw the figure of a curly-haired boy shinnying up the flagstaff away from the red-hot coals. He hung there a moment, then dropped—the last of four hundred youngsters to die.

By midnight 611 bodies were laid out on the grass; 400 were still in the water. Coal carts, vans and delivery wagons were pressed into service. Soon morgues all over New York, Harlem and the Bronx were choked with bodies.

Boathouses and police stations were clogged. And still they kept coming.

For days afterward the river continued to give up its dead. But some were carried away by the current, never to be found.

Hardly a house in St. Mark's parish was without an emblem of death on the door. Some bore many. Pastor Haas lost his wife and daughter; Frank Perditsky, the lad whose report of the fire had brought only rebuke, lost his mother, sister and brother.

For the wholesale burials and for those left without means of support, a fund of \$124,000 was raised. Those unidentifiable from the action of flames were buried in a common grave.

Why did this disaster happen? A coroner's jury listened to 1,000 pages of testimony in an effort to learn the facts and fix the blame. The revelations resulted in sweeping reforms in the name of safety that remain today.

Captain Schaick, beset by savage criticism, gave many reasons for not beaching his ship sooner or taking advantage of one of the docks. In one place the water was too deep. In another, it would have set lumber yards and oil tanks afire.

The consensus, however, was that laxity began further back than the men in charge of the ship. The indifference and negligence of the owners, the Knickerbocker Steamboat Company, and that of the U. S. Steamboat Inspection Service in the New York district had inscribed the dread handwriting on the wall.

General James A. Dumont of the inspection service admitted that the life preservers hadn't been thoroughly inspected since they were put aboard at the time of the *Slocum's* commissioning. Henry Lundberg, who claimed to have inspected the ship before the fatal excursion, was found to have had only four months' experience. His inspection had been confined to poking an occasional lifebelt with a stick. Nothing had been done about the fire hose.

A fantastic sidelight developed from the disclosure that one concern making life preservers was inserting seven-inch *cast-iron* bars in each cork block to bring the belts up to the required weight.

Of the crew, Flanagan turned out to be a former iron worker, unlicensed as a mate. The remainder of the men were truck drivers, laborers and dock workers who knew nothing of emergency measures at sea.

After three hours' and forty minutes' deliberation, a coroner's jury found that eleven men should be held under bond on charges of manslaughter in the first degree. These were the president, secretary and five stockholders of the Knickerbocker Company, Captain Schaick, Commodore John A. Pease of the Knickerbocker fleet, Mate Flanagan and Inspector Lundberg.

A year later Captain Schaick was sentenced to ten years in prison for criminal negligence. But all the others succeeded in escaping responsibility for deaths fixed at 938 by the inspection service and 1,031 by the New York police—one of the most appalling of all maritime disasters.

San Francisco: City of Courage

By Felix Riesenberg, Jr.

SAN FRANCISCO, CAL., April 18, 1906—Just after 5:15 on the morning of April 18, 1906, San Francisco was rocked by the mightiest terrestrial upheaval in California since the prehistoric birth of San Francisco Harbor. The earth shifted for 300 miles along an ancient fault that crossed San Francisco.

As day broke over the High Sierra, thousands of half-clad people rushed into the streets to cower in small groups. They had been startled by a tremor lasting two minutes. Glass, chandeliers, crockery and bric-a-brac smashed when houses shifted and flimsy shacks collapsed. Sleepers awoke as if from a nightmare; some were thrown from their beds, and people already abroad were brought to their knees. Large fissures opened in Van Ness Avenue; streetcar tracks on Market were twisted; East Street wharves bent out of line; all lights went out.

Bums sleeping on the steps of the City Hall were buried under tons of ground concrete as columns buckled and sent the great dome down on the street. Buildings listed at crazy angles along many streets; the Spanish tower on the Ferry Building seemed about to topple. The man-made land over old Yerba Buena Cove suffered the heaviest damage from the shaking of the earth. The entire business section settled; shattering noises were heard inside deserted office buildings, and warning puffs of smoke showed in fifty different blocks.

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From the East Bay and the harbor's islands the city was seen to burst into flame, half an hour before daylight. The hissing of broken gas jets and electrical connections was followed almost instantly by yellow flashes on the roofs of buildings at the tip of the peninsula. "Fire!" dread cry of gold-rush San Francisco, was heard in saloons and boarding houses north and south of Market Street. Blazes broke out in many places and dense smoke began spreading fanlike before a westerly breeze.

Fire engines clanged down Market and Mission streets from all over the city, pushing into the billow of smoke that was piling up around warehouses, factories, chandleries and slop shops. Stupefied men tumbled from flop houses to help firemen connect hoses; seamen carted heavy chests thrown from windows, and drunks were hauled out of the path of the growing conflagration.

In the produce district frenzied horses broke away from carts and stampeded through the narrow streets, their cries rising above the human yells and shrieks. Firemen felt their hair singeing and bawled for water. Smoke was suffocating and blinding them. "Open the valves! Water!" The heat was becoming unbearable. Steadily they were pushed back. "For God's sake, water!"

But there was no water! Mains had been broken in the quake, and 80,000 gallons were washing away!

Helpless, the fighters gave way before the hot, choking gusts. In half an hour all downtown San Francisco was a torrent of flame. No one doubted that the fire would consume the entire city.

Hapless people from the Barbary Coast cheered crazily, running toward the shop district; fire was the friend of the poor. Prostitutes poured out of Morton Alley, some of them with their scant clothes aflame. Muddled men and women were trapped in darkened ways along Pacific Street. A retreating army pushed through the financial section, headed up California Street to the safety of Nob Hill.

In Chinatown, gongs beat wildly and a yellow horde

surged toward the waterfront. Italians and Irish from Telegraph Hill joined the Chinese on East Street, tumbling with them under the dank floors of piers where joss gods and crucifixes were fastened side by side.

From Fisherman's Wharf to China Basin, vessels were cast off from their docks and towed into deep water. The fireboats *Active* and *Leslie* moved in to send streams of salt water over pier sheds and warehouses, through the clouds of black smoke. Naval craft were worked alongside the bent wharves, landing sailors and marines from Vallejo and Yerba Buena Island.

Tens of thousands moved westward toward the Presidio and the ocean, or south along the peninsula. Parents dragged crying children, together with parrots, canaries and cats; dogs whelped at their heels. Household goods were lashed to sewing machines, toy express wagons and baby carriages. Men and women trying to move against the crowd—to find lost ones—were trampled along with paintings, tapestries, clothes and furniture.

By mid-morning the fire was far out of control. General Funston, in command at the Presidio, ordered his soldiers to use dynamite, but the flames swept over the demolished areas, the terrific heat starting new blazes ahead. Equally ineffective were the hundreds of gallons of sewer water that firemen tossed on buildings. South of Market the fire ate through the tightly packed shacks of workers, marching furiously toward the Palace Hotel. The resultant squall kindled near-by fruit and print shops, blustering on to gut the slender Pacific Mutual Building, the city's first skyscraper. The financial and retail districts were doomed. Soon Chinatown would be ravaged.

Mobs retreating from the downtown cauldron suddenly saw black smoke rising over Hayes Valley, far from the major fire. Before noon that shanty-crammed part of town was a blazing geyser 100 feet high. The new fire was fanned north toward the original conflagration. It had

been started by a woman whose defective chimney caught while she was cooking breakfast.

By late afternoon San Francisco was hidden below a thick mephitic smudge. From under it came the noise of burning timber, the crash of entire structures. The Grant, Kohl, Parrot, Call, Monadnock and Examiner buildings had been razed. Beams were twisted, cast-iron columns went plummeting to basements, and tiles blackened. Corrugated-iron houses melted like lard; bricks split and car wheels became puddles of molten metal. The scorching wind from the great fire was felt in the East Bay. Cinders fell for miles around the city, and wild animals as far away as the Sierra foothills were made nervous by the smell.

The first night brought new horror. Tired and dirty men stumbled into the camps with word of the terrible scene downtown. The Palace Hotel had gone after a brave fight. The twelve-story Flood Building, the most massive office structure in the city, was demolished, together with hundreds of other landmarks. Men and women had met gruesome deaths everywhere; hotels had become biers; swarms of rats were being chased ahead of the fire.

Through the night the encampments swelled with new refugees. Exhausted people dumped their few belongings and rushed from group to group, making frantic inquiries about lost persons. In the dark, rumors began to spread. It was the end of the world. A man said he had seen wireless reports: Manhattan Island was submerged; Chicago had slid into Lake Michigan; the entire Pacific Coast was afire. The word was passed along and exaggerated. A wild-eyed man, wet with red flesh seared across his face, stumbled through the camps shrieking: "The Lord has sent it! The Lord!"

On Wednesday morning the entire city was in danger of being annihilated. The Mission fire had divided, a great arm leaped across Market Street to join the conflagration

whose smoke rolled up Nob Hill. Mobilized citizens were racing in and out of mansions, cutting valuable paintings from their frames, and stowing them in rolls on wagons. Costly antiques and rare books were trampled in the rush. The heat was forcing the throng back; fire enveloped the half-built Fairmont Hotel. As the hot tempest blew the plateau clear, San Francisco dug in to make a final stand against that convulsive scud of flame. Van Ness Avenue was chosen as the last boundary. There the fire must end.

By the time buildings on the slope down to the wide avenue began burning, loaded field pieces had been dragged in from the Presidio. They were mounted on the west side of the street to command the houses and lots opposite. Caches of dynamite were planted by soldiers; policemen forced the crowds back; firemen wet down the area with the last of 250,000 gallons of sewage.

Before the fire was within six blocks of them, a scorching wave of heat made the gunners cringe. New volunteers were mobilized. The torrent of flame must be stopped at Van Ness. Men and women cowered in awe at the spectacle of roasting houses. The stoutest structures—buildings of brick with steel reinforcements—did not last five minutes, while frame houses writhed before the flames got to them. Nob Hill—black, smoking—rose in the distance. The fire was four blocks away.

Asbestos roofs on the far side of Van Ness began to curl. Trickle of smoke showed on the sides of houses next to the fighters; the wood was too hot to touch. Gunners ducked behind the artillery, their hair singed. The noise of falling brands and the blustery wail of driven smoke deadened other noises. The fuming, roaring thing loomed up so large and close that people were in partial darkness. As the flames swept into buildings three blocks away, the order came: "Fire!"

The guns barked. The shot crashed into the blaze. At that instant terrific explosions lifted burning brands skyward, showered men with a hail of red-hot cinders. Soldiers

fired again and began retreating with their heavy field pieces. From the Pacific Heights slopes they fired new rounds.

Was the fire halting? No one could tell in that cloud of black mist. The shooting continued.

Suddenly people were pointing south; the smoke was turning before a freshening wind. The thick fumes were breaking to show fringes of the fire at the curb of Van Ness. The inferno was off, raging toward Sutter Street, where it would meet the other arm of the blaze and burn itself out. The fighters raced opposite it, hugging one another, shouting that soon the fire would be over; people with homes on Franklin Street, one block away, wept and offered prayers of thanks. Houses smoked along Van Ness, some of them caught; but the citizens and soldiers had the fire under control. The mob was cheering wildly.

Then came cries from back on Van Ness, frantic calls by persons pointing toward the north and east. The fire had taken a new turn. It was snapping down toward the waterfront of North Beach, howling back in the direction of Telegraph Hill.

Through the day that hot wave peeled off false faces and demolished homes in a wide swath toward Russian Hill. It roared at Fisherman's Wharf and missed by only half a block, having, as the *Chronicle* stated, "found a more delicious morsel in the shape of the gas plant at the foot of Powell Street." A gigantic explosion in the sky, like some bursting meteor, sent angry, voracious tongues whistling over and around Russian Hill.

The fire approached Telegraph Hill from three sides. Waiting to battle it were Italians and Irishmen who had returned after evacuating their women and children. They blasted it away on one side with dynamite; on another, buckets of sea water held off the flames. Sweating, cursing, praying men flayed at the licking blaze with brooms, blankets and boards. Only slowly did they beat it back.

Sudden shouts called the fighters to a third front. A

new fire was climbing the hill. It gained. Then men clung to rocks, dumping bucket after bucket, watching the heat evaporate the water. Brooms caught fire and houses were smoldering. Soon the water was exhausted and the men were ready to quit. Flames had enveloped the base of the pinnacle; hope seemed gone.

Then Italians appeared, cheering hysterically as they rolled out barrels of wine. Five hundred gallons of the red juice were sloshed on roofs, bedding and blankets. Quickly the grapes checked the flames. "Viva vino! Viva vino!" the happy people shouted.

Late in the second day the blaze was being beaten in the Mission, far out toward Dolores, and fire boats lay off Pier 27 showering water on flames that were tearing toward the United States bonded warehouse in the block bounded by Telegraph Hill, Sansome and Battery streets. There, stopped by stout stone walls, ended San Francisco's great fire of 1906.

"We are determined to restore to the nation its chief port on the Pacific," Mayor Schmitz wired President Theodore Roosevelt before the ashes had cooled. The entire nation responded to the disaster. Word was flashed from Chicago pledging a million dollars. E. E. Harriman placed his railroad at the disposal of the city, giving orders that passenger limiteds were to take to the sidings when fast San Francisco-bound freights appeared. California, Oregon and Washington coast ports dispatched steamers loaded with provisions and rescue workers.

But San Francisco seemed doomed. Vans and wagons blocked the roads out of the metropolis as 200,000 people fled. Railroads, giving free transportation, were packed, and steamships with other thousands waited to sail. Those with no place to go stood in mile-long bread lines and slept under trees.

Rescue parties stirred through the ruins, coming upon hundreds of charred remains, answering the dying calls of

men and women pinned under hot wreckage for three days. Huge funerals were held all over the city, many being buried in Portsmouth Square.

Looting had begun before the last flames were out; but it proceeded on a grand scale as armies of tramps converged on San Francisco aboard the fast rescue freights. Bums took their places in the bread lines, filched anything they could lay hands on; vandals plundered deserted houses and even robbed the Red Cross. Blood showed on the broken window panes of jewelry stores where robbers had put their bare fists through.

Meanwhile the nation read details of the disaster and was awed by the gargantuan losses. The size the western port had attained suddenly dawned on other cities. For months, pamphlets, books and lectures described the horrifying disaster. Four square miles of San Francisco lay charred; 28,000 buildings were demolished; 200,000 people had been left homeless. The total damage was in excess of a billion dollars. Four hundred and fifty-two were counted dead. As many more were thought to have perished unknown in Chinatown, the Barbary Coast, Mission hovels and East Street dives.

When a group of architects, engineers, contractors and bankers stood near the summit of Twin Peaks and looked down on the wreck-bestrewn peninsula that reached away to the north and west, it looked like a great battlefield filled with maimed and unburied monsters. Through binoculars those sobered men were picking out the jagged walls of topless structures, pointing to many demolished sections. From under a haze of mortar dust, the paneless windows of gutted buildings stared back at them. The city of San Francisco was dead.

Large blueprints were stretched on the grass, the D. H. Burnham Plan of 1904. It proposed a "Paris of America," a beautiful metropolis to cost \$50,000,000 and take half

a century to complete. The men continued to scan the desolate vista below. It was difficult even for the most imaginative to picture Burnham's San Francisco of terraced hills, wide boulevards, white symmetrical buildings, and many parks. Could the distinguished engineer's dream be realized?

The men argued. With thousands homeless and business at a standstill, each day of delay was lessening the chances for ultimate recovery. It would take months, even years, to obtain land deeds necessary for changing the direction of streets. Property owners were certain to balk. Financial backers would never agree. The cost was too great, And the city must be rebuilt *immediately*.

From a week of day-and-night consultations there emerged a modification of the ambitious Burnham plan. The new San Francisco would be an earthquake-proof and fire-proof metropolis of modern, clean buildings. Streets would be widened where possible, the waterfront enlarged and a great Civic Center constructed. But the city would retain its originality of outline.

Spirited merchants moved into their wrecked shops, cleared away the heaviest part of the debris, and posted hopeful signs. Restaurants told citizens to "Eat, drink and be merry, for tomorrow we may have to go to Oakland." Bankers opened offices in their homes and many rented space at "gold-rush rates."

As the first foundations for new structures were laid, newspapers announced that "great buildings are to rise from the ashes." Unlimited credit had been extended to the brave city and many were returning to lend a hand in the restoration. San Francisco, the citizens shouted, would be even greater than before the fire.

The spirit of the city was amazing. No amount of adversity seemed capable of sinking it. As early as December of 1906, when buildings had barely been started, San Francisco shouted a defiant challenge to reports that New Or-

leans was being considered for an exposition site to celebrate the 1915 opening of the Panama Canal. At a downtown mass meeting thousands stumbled through cluttered streets. In two hours \$4,000,000 was pledged to an exposition fund, \$500 a second!

By 1911 there remained scant trace of the fire. (San Franciscans take exception to outsiders' calling the 1906 visitation "the quake" instead of "the fire." Had there been nothing more than an earthquake, few would remember it.) New buildings lined old Market Street and climbed higher up the hills to make the city rise off the peninsula like some great concrete and steel fortress. Never had San Francisco been so new. An Embarcadero came to replace historic East Street, and great piers jutted into the bay, heavy with returning commerce. Population was returning to its March, 1906, figure; people concentrated on forgetting the disaster.

On the night of April 20, sitting in the offices of the *New York Sun*, Will Irwin had written the city's obituary. The next day his article appeared under the head: "The City That Was."

"The old San Francisco is dead," he wrote. "The gayest, lightest-hearted, most pleasure-loving city of the western continent, and in many ways the most interesting and romantic, is a horde of refugees living among ruins. It may be rebuilt, it probably will; but those who have known that peculiar city by the Golden Gate, have caught its flavor of the Arabian Nights, feel that it can never be the same. It is as though a pretty, frivolous woman had passed through a great tragedy. She survives, but she is sobered and different. If it rises out of the ashes it must be a modern city, much like other cities, and without its old atmosphere. . . ."

Now newspaperman Rufus Steele, in an article entitled "The City That Is," advised Will Irwin to "dry his tears."

"Of a truth the things which he meant by 'the old San Francisco' did not die and are not dead," wrote Steele. "By the Market Street parade, by the Poodle Dog, by the wall pictures at Coppa's, the Orpheum gallery, by the honor of Metia, by Sanguinetti's, by Italian opera, by Lotta's Fountain, by Fillmore Street on Saturday night, by the potent signs of these 'the old San Francisco' is very much alive. . . ."

"The Mine's Afire!"

By James Johnson

CHERRY, ILL., November 13, 1909—Six bales of hay were loaded into a coal car, and a husky laborer rolled it out of the barn. The rain had stopped, but mud stood shoe-top deep beside the narrow track, and cinders packed between the ties were soggy underfoot. Cold wind slapped the man's baggy overalls against his legs as he pushed the high load into a waiting elevator cage. He signaled, cables whined, and the car disappeared.

Three hundred feet down, a mule driver hitched the car onto a train of six others and hauled them down the busy passage. It was darker than usual in the mine. A power line was broken, so obsolete oil lamps hung from cross-beams alongside useless electric bulbs. Near an airshaft, the driver switched onto a spur where the car would wait until someone got around to taking it down to a stall-filled room on the third level where sixty mules were stabled between shifts. He gave the load a final shove and went on with his work.

The hay coasted a way before stopping. No one saw the high pile of fodder roll under a low beam, tip an open-flame lamp and splash burning oil over the straw.

Months later, experts investigating the Cherry Mine disaster which shocked the nation in 1909 pieced this story together and shuddered. A more devilish human crematory could not have been devised; oil to ignite the blaze, hay for tinder, dry timbers for kindling, and countless tons of coal to feed the furnace. The catastrophe seemed even more horrible because it need never have happened.

Scene of the accident, one of the grimmest in U. S. coal-mining history, was Cherry, Illinois, a company town

owned by the St. Paul Company, fuel supplier to the Chicago, Minneapolis & St. Paul Railroad. There was irony in the drab settlement's colorful name. Stark gray towers rising above the mine shaft were banked with black mountains of coal. Four hundred houses, a few false-front stores, and seventeen saloons lined the rutted streets. Most of Cherry's 2,000 residents were recent immigrants from Italy, France, Ireland and the Slavic countries. The miners' language differences gave them little in common except able-bodied youth, children, and employment in the nation's most hazardous industry.

The St. Paul mine was modern. It had been open for four years and was considered one of the nation's safest. When the roof in its original workings became dangerous, they were abandoned and lower veins tapped. The new sections contained solid timbering. Huge fans pushed fresh air below. Heavy pumps kept tunnels dry. Two steel cages operated between the surface and the second level. Below the main shaft, a smaller hoist had been improvised to serve bottom workings 500 feet into the earth.

At 1:30 on the afternoon of November 13th, a miner smelled smoke and ran to where a hay-loaded car stood burning on the track. His shouts were answered by several workmen. The blaze was not big enough to cause much excitement. They pushed the car down the passage to an air shaft and tried to hurl the smoldering bales into a water-filled sump at its bottom. Strong drafts fanned and scattered the straw. Several miners went for buckets of water. Hoses were pulled from racks, mismatched connections wrenched together and valve wheels spun. But the pressure was low, and only a trickle came from the nozzles. A wide circle of timbers caught fire. The workmen beat flaming wood with sweaty shirts, spread burning coal dust with shovels until the heat became unbearable. Tunnel walls cracked, releasing inflammable gas. The miners fled in panic. A dreadful cry echoed through the corridors.

"The mine's afire!"

Some of the 300 men on the second level heard the shouts, dropped their picks, and raced for the elevators. Workers in faraway galleries were unaware of their peril until smoke drifted to them minutes after an alarm could have saved their lives.

Miner John Phillips left a hand drill sticking in the coal face and started toward the lift. A crew of eight men rushed past him going the wrong way and insisted that he follow them. At least twenty miners sat in a row along the wall waiting resignedly for death. Engulfed by dense smoke, men sagged to the floor, clawing at their throats. Others ran pell-mell down the tracks, tripped and bashed their heads on ties. Cries like the shrieks of wild animals split the air. Phillips crawled through the passage on his hands and knees, using the rails for a guide. He grew faint, gasped for breath, then remembered his tobacco pouch. Dumping its contents, Phillips pulled the sack over his nose and mouth like a mask and tied the drawstrings behind his head. The quick-witted inspiration saved two lives. Within 100 feet of the hoist, Phillips found a friend unconscious, and he pulled him along to safety.

Eight trapper boys were in the mine—opening and closing small wooden doors that channeled fresh air into rooms where the miners dug coal. Most of them were kids under sixteen who had lied about their age to get their names on the payroll. Young Jimmy McGill ran to his dad when the fire started, and together they sought escape. The boy clung to his father's hand until he could walk no further.

"Go on, Pa. Leave me here," Jimmy pleaded as he slumped to the floor.

McGill pulled off his belt, strapped the limp body to his back, and struggled forward until he neared the cage. Within sight he stumbled and fell. Before losing consciousness, he yelled for help. The cries were heard. Two nearly

lifeless forms were picked up and hoisted to the surface.

On the third level, 185 feet below the raging fire, almost 200 men were entombed. A cage tender pressed the signal button without response. His elevator was controlled from above. He could do nothing for the frantic mob that crowded around him, pleading: "Take us up. For God's sake, take us up!"

When the miners realized the hoist would never move, they swarmed over its cage and began to scale the shaft's perpendicular walls. The tender followed, clawing the polished face for handholds, stretching his arms upward, balancing on brittle juts of coal. Smoke and heat from the fire directly above blinded and strangled the climbers. They screamed and slipped back down the wall, clutching at anything they touched, dragging others after them to form a mound of broken bodies at the bottom of the shaft. A few miners and the tender managed to reach the top. Heads and hands were gashed. Blood dripped from their faces. Blisters swelled their skin. Lungs were taxed to bursting. Mine superintendent John Bundy found the men climbing out of the shaft and guided them to the elevator. Several minutes later he dropped dead of exhaustion.

On that windy afternoon, miners' wives were hanging wash, sweeping back porches, nursing babies in rocking chairs beside dirty windows. They glanced at the tall structures that straddled the town and were stunned. Black smoke blossomed over the mine. Frightened screams ran from mouth to mouth along each street. In a few minutes, Cherry's whole population had gathered at the pit mouth.

Among the first to arrive was the company physician, a tall, calm young man, Dr. L. D. Howe. He moved swiftly but gently among the frantic women. At the elevator he stopped, turned slowly and called for volunteers. There was a long silence, then a few stepped forward. Some were miners, skilled in survival underground. Others were un-

trained. The town's postman, a clothier, a grocer, a livery man from a neighboring village adjusted unfamiliar lamp-caps to their heads. Alex Norberg, manager of the third vein, joined Dr. Howe. He would lead half the party. Fourteen men were lowered into the earth—one lived through the following hours.

At the second-level landing, the volunteers separated. Scorching air whirled around them. Leaping flames singed their faces. They stumbled over the corpses of mules and men, searching the dark labyrinth until they heard a gasp, a prayer, a curse. Stupefied miners were led or dragged to the waiting hoist. Fists pounded the signal button, and the cage slid upward. When the rescuers felt faint, they rose to the surface for a breath of fresh air. Those who did not realize their danger in time were overcome and dropped in the darkness. Others wandered into rooms too near the fire. Their lamps winked out; bodies pitched forward. Lung-collapsing after-damp instantly claimed their lives.

Dr. Howe went down into the flaming pit seven times. Once he had to be carried from the lift and revived. On the last trip up, he passed Alex Norberg and his party in a descending cage. The nearly exhausted physician waved feebly. His greeting was returned with a lusty cheer—tribute for the twenty-five lives he had already saved.

At the surface, Dr. Howe went to the elevator control house. Inside, a sweating engineer, John Cowling, had answered the order of each vital bell since the fire started. He was tense.

"John," Alex Norberg had said before he started down, "pay strict attention to the signals. If the signals go wrong we're lost."

Cowling listened for instructions from below. They came quickly. Three bells—"we are entering the elevator." One bell—"hoist away." Cowling started the car upward and immediately received the four-bell signal—"hoist slowly." He moderated the rising car's speed until he

heard one bell—"stop." Two bells—"lower away." Three bells—Cowling could not believe his ears. Three bells had no meaning. The men in the control house waited anxiously. Dr. Howe knew the danger. He could stand the tension no longer and insisted the car be brought up.

The engineer's hand tightened on the lever. He tried to imagine what was happening 300 feet below him. Perhaps the signal button had been struck repeatedly in panic. Broken lines might be sending garbled rings. But what if the men were off the cage? He could not pull away their only means of escape. Norberg had told him to pay strict attention. The doctor pleaded. Three . . . four . . . five minutes passed. Cowling jammed the lever forward.

When the lift appeared at the top of the shaft, John Cowling buried his face in his hands. The crowd gasped, women screamed and fainted. Four men lay on the roof where they had climbed to escape the blistering heat. They had suffocated. Eight men, including Norberg, were slumped against the cage's sides, bodies twisted into grotesque positions of agony, clothing black and smoldering. They had been roasted alive.

The hoists were repeatedly lowered. They returned empty. No one dared go back into the inferno. No one came out. Officials estimated 301 miners were trapped.

A miserable group of mothers and wives huddled together around the colliery. Babies were wrapped in shawls. Children clung to full skirts. All of them stared at the motionless elevators, waiting in dumb agony for a miracle that never came. Night and a dreadful silence spread over the town. In shadowed corners of sheet-metal buildings, families sobbed and moaned. Torchlight flickered on tired, grimy faces. Still waiting at dawn were the stricken wives of Dominick Stefonelli, Olaf Sandeen, Joe Tinko, John Donaldson, Frank Yagoginsky, Henry Stewart.

One street of squat bungalows had become "death row." Out of thirty-three houses, only two were spared grief.

Smoke filled the sky above Cherry, Illinois. It dimmed the sun and drifted out over the prairie—a heavy shroud for a town of the dead.

Flatcars loaded with 7,200-gallon tanks rolled in from near-by towns. Pumps hammered all day Sunday pouring tons of water into the shafts. It fell past the second level without dampening the flames and flooded the bottom. The fire raged on.

Late that night, workmen gathered around the mine's six exits. Platforms of heavy planks and railroad ties were built across each shaft's smoking mouth. Bystanders did not fully realize what was being done until the wooden covers were buried under mounds of wet sand. The mine had been sealed.

Imaginations ran wild. Distraught wives were convinced their husbands still lived but would soon suffocate without air. Poison gas would fill every passage. Men would climb to the surface and find no exit. At that moment, they might be pounding on the timbers, screaming for help.

Mining engineers tried to explain. If the fire continued to be nourished by oxygen it would burn forever. Water could not reach it. It had to be smothered. Nothing could be done until the flames died.

This reasoning was scientific, but few people understood it. Undercurrents of dissatisfaction grew so strong that on Monday a steel bucket was twice lowered into the flaming pit. Mining inspectors, protected by asbestos suits and breathing helmets, explored the depths. Their report was discouraging. Deadly after-damp filled the corridors. Timbers were burned, ceilings caved in, walls crumbled. There were no bodies near the entries, and the experts believed the men had rushed to far ends of veins where some air might be found. Anxious voices asked the engineers if there was a chance some still lived. They shook their heads doubtfully. One thing was sure. Fresh air would rekindle the flames. The mine must be closed again.

By late Tuesday, even the wives had given up. No man could live so long in fire. None would be saved. Families who had kept vigil at the mine entrances for four days and three nights turned away in despair. Their pleas were heartrending: "Give us our dead. Let us bury our dead."

That evening a Polish miner, Leod Winolichie, ran out of his house into the back yard, flattened himself on the ground and listened. He jumped up and hollered: "There are men alive down there!" People gathered around as he explained the startling news. "My house is over the mine. Three times we have been shaken. They are signaling with dynamite."

Farmers at the edge of town confirmed his story. Muffled rumblings came from the earth beneath their fields. Everyone tried to guess what the booming meant. Some reasoned that gas had collected in the galleries and been ignited. They feared the mine was erupting and would destroy itself. Others whispered their belief where worried families would not hear. The doomed men were ending their torture, deliberately blowing themselves up to escape the miseries of slow death. It had happened in other mines. But to frantic mothers and wives the explosions brought new hope. Their loved ones still lived!

The crowd's temper changed. Indignation meetings sprang up on every corner. There was talk of violence, officials were threatened. In saloons, miners pounded the bar and swore they would take over the sealed shafts by force.

Sullen groups stood along the tracks on Wednesday morning and watched two companies of state militia climb off special trains. Soldiers with rifles and bayonets guarded the colliery, padlocked the saloons, blocked roads, patrolled the streets. There were no outbreaks, but tension mounted and Cherry rocked on the edge of rebellion.

By now, the outside world had heard of the disaster and wanted to help. Special committees formed in many cities to promote fund-raising campaigns, bazaars and concerts.

Churches and newspapers started collection drives. The mayor of Cherry, the St. Paul Coal Company, and the United Mine Workers of America formed a relief organization. Ernest P. Bicknell, national director of the Red Cross, arrived to manage the spending of \$100,000. Money, food and clothing poured in. Municipal fire departments provided crack squads with their own equipment, to be on hand when needed. Six carloads of coffins from Chicago were shunted onto a railroad siding. Every through train brought more officials, reporters, relatives of bereaved families and thrill seekers to swell the town's already crowded tent-city suburb. The entire nation waited and watched Cherry, Illinois.

On Thursday the mine was opened.

Inspectors cautiously penetrated the corridors, examining ceilings, tapping charred timbers, testing the air. Firemen entered smoking chambers and played water on smoldering coal. Dead miners were piled like cordwood into the elevator cages. A circus side-show tent erected near the main shaft became the morgue. There the charred bodies lay in long rows as the pitiful process of identification began. Horse-drawn hearses shuttled endlessly between the graveyard and town.

They found Sam Howard with a diary at his side. He was twenty and would have married Mamie Robinson on Christmas Day so wanted to leave word that she should have his diamond ring. Sam kept on writing. He described the tortures of hunger and thirst his party endured. They had a "swell time" building paddlewheel-style fans to keep noxious after-damp from closing in on them. Sunday evening, with a fan apiece to clear the way, they tried to make the bottom where the air might be better. "We had to come back," he noted simply. "We can't move front or backward . . . What is a fellow going to do when he's done the best he can?"

His last entry was written at 12:44 P.M. Monday.

"Our lives are going out. I think this is our last. We are getting weak——"

For two days, volunteers combed the deep recesses recovering bodies. They honked automobile horns and listened hopefully for human voices to call out over tinny echoes. Experts agreed there would be no survivors, but exploration continued. On Saturday afternoon, a full week after the fire had started, a party searching the south entry heard noises. Out of the gloom stumbled eight ghostly figures—miners who had lived through a nightmare. They told of twelve others, too weak to stand, who waited for help at the end of the passage.

Heroes of the valiant story were George Eddy, assistant mine manager, and night foreman Walter Waite. Seven days before, they had found themselves cut off from the main hoist and hurried toward a remote passage they believed safe from fire. Wandering groups of miners joined them, asking for leadership. Twenty-one men banded together before Eddy and Waite reached the place where they intended to make a last stand. Black damp followed close behind them. Waite entered a room and was almost overcome. He and Eddy gave urgent instructions. The workmen obeyed. Stones, lumps of coal, clothing, empty dynamite kegs were hastily piled into barricades to plug the tunnel openings. Wet mine dust was plastered over the walls, chinking every crack. The gas-proof brattices took three exhausting hours to construct. When their work was done, the miners wondered if the fresh-air chamber would prove a refuge or a tomb.

Leaders maintained order. William Cleveland sang hymns. John Lorimer conducted divine services in a rich Scotch burr. "Keep up your hearts, boys," he encouraged. "God is with us."

Sometimes the miners shouted. There was never any answer. They called the roll each hour, then sat in silence. At first there were lights, but precious oil soon burned away.

Time passed slowly in the pitch darkness. Nerves chafed raw. Minds gradually sickened with the thought of being buried alive.

George Eddy wrote a farewell note to his wife and three children. All the miners composed and signed a letter saying they did not blame anyone for the accident and believed everything had been done to save them.

By Saturday morning, some of the men were too exhausted to move. One miner became hysterical and, before he could be stopped, beat down part of the lifesaving wall. He ran out into the darkness, and they heard him stumble and fall. The barricade was painfully rebuilt.

Hours later a sentry pulled an ax-handle plug from the air hole in one wall. He sniffed cautiously, took a deep breath and yelled: "Fresh air!" Eight miners broke through the barricade. They carried buckets and went out into the corridor in search of water. None could be found. The disappointment lessened their will to live. The exertion weakened their feeble hearts. Suddenly they heard distant sounds. Echoing footsteps gave them strength. They stumbled forward toward the oncoming lights. Their ordeal was over! Twenty men had lived.

But no more survivors were found. In a few days, the fires began smoldering again, and the search ended. Cement caps were laid over each exit. They were not removed for months, but the Cherry mine was not forgotten. In it, 259 men had died. In it, one of the most dramatic mine disasters in industrial history had taken place. Publishers, clergymen, teachers—the people asked why.

Their answer came from the inquest, from official and private investigations. Not one report put its finger on any major cause. The calamity was a result of minor oversight, slight carelessness. Fate linked them together and murdered. Both miners and management were victims of their own human neglect. The mine had been a model of safety, but it was not safe enough.

In 1909, more than four out of every thousand miners were expected to die; thousands more would be injured. The St. Paul Coal Company fire brought the hazards of mining to public attention more dramatically than ever before. Grisly pictures and pathetic stories had their effect. Laws were enacted, inspections stiffened. Scientific devices were invented and installed. Disasters decreased in number and intensity. The 259 miners who lost their lives in the flaming pit below Cherry, Illinois, left a significant legacy.

Sweatshop Firetrap

By Louis Waldman

NEW YORK, N.Y., March 25, 1911—On the afternoon of March 25, 1911—a raw, unpleasant Saturday afternoon—I was deeply engrossed in a book at a reading table in the old Astor Library on Lafayette Street when I suddenly became aware of the sounds of fire engines racing past the building. Along with several others in the building, I ran out to see what was happening, and followed the crowds of people to the scene of the fire.

A few blocks away, the Asch Building at the corner of Washington Place and Greene Street was ablaze. When we arrived at the scene, the police had thrown a cordon around the area and the firemen were helplessly fighting the blaze. The eighth, ninth and tenth stories of the building were now an enormous roaring cornice of flames.

Word had spread through the East Side, by some magic of terror, that the plant of the Triangle Waist Company was on fire and that several hundred workers were trapped. Horrified and helpless, the crowds looked up at the burning building, saw girl after girl appear at the reddened windows, pause for a terrified moment, and then leap to the pavement below, to land as mangled, bloody pulp. This went on for what seemed a ghastly eternity. Occasionally a girl who had hesitated too long was licked by pursuing flames and, screaming with clothing and hair ablaze, plunged like a living torch to the street. Life nets were torn by the impact of the falling bodies.

Condensed from the book Labor Lawyer, published at \$3.50 by E. P. Dutton & Co., Inc., New York, N. Y., copyright 1945 by Louis Waldman.

The emotions of the crowd were indescribable. Women were hysterical, scores fainted; men wept as, in paroxysms of frenzy, they hurled themselves against the police lines. As darkness came on, the fire was brought under control and by word of mouth the details of the dreadful story spread through the East Side.

The Triangle Waist Company, owned by Max Blanck and Isaac Harris, was a non-union shop which the previous year had stubbornly held out against demands of the Waistmakers' Union. One of the conditions which the union had won during a recent strike called for a half-day's work on Saturdays. And so while all other waist factories in New York were closed that afternoon, the Triangle factory was open with a full shift of about 850 workers, most of them young girls.

The factory had woefully inadequate sanitary facilities, so that it was necessary for the workers to leave the plant in order to reach the toilets. As a precaution against what the employers called "interruption of work," the heavy steel door which led to the hall and stairway had been locked. Piles of oil-soaked waste lay under the sewing machines. A carelessly tossed cigarette or match had ignited these piles of waste material and the fires leaped from machine to machine, converting the overcrowded plant into a roaring holocaust. The girls, sitting at the machines, were packed in tightly, row upon row, chairs back to back. In the face of such crowding, escape was virtually impossible, and panic must have been instantaneous.

One of the owners of the Triangle Waist Company who was in the building at the outbreak of the fire left it hurriedly without unlocking the exits, thus dooming the girls inside. Nor had the girls ever been permitted to use the passenger elevators, due to the owners' fear that they might carry out stolen material.

When the fire was over the toll of the Triangle disaster was 147 killed and burned to death and several hundred

suffering from serious burns. Police and firemen on entering the charred building discovered bodies literally burned to the bone. Blackened skeletons were found bending over machines. In one of the narrow elevator shafts of the building they found lifeless bodies piled six stories high.

A few days later the Waistmakers' Union arranged for a mass funeral of the dead, since most of the victims had been burned or mangled beyond recognition. City officials prohibited any demonstration, but plans for the funeral were carried out nevertheless. More than 100,000 workers marched in a silent cortege behind the flower-laden hearses. The streets through which the sad procession passed were draped in black and purple; East Side places of business were closed for the day.

Together with thousands of others I stood on the sidewalk and watched the funeral procession go by. A mass emotion of sorrow and despair was felt everywhere on the East Side that day. But in the weeks that followed, these emotions gave way to angry questioning and a determination that a similar tragedy must never take place in New York again. We all felt that the workers who had died in the plant of the Triangle Waist Company were not so much the victims of a holocaust of flame as they were the victims of stupid greed and criminal exploitation.

Shortly after the mass funeral, a crowded meeting was held at Cooper Union to consider the tragedy and its meaning for the working people of New York. The historic basement auditorium of Cooper Union was jammed long before the meeting was scheduled to open. I have been to many a meeting in that auditorium since and I have addressed many meetings there myself, but never have I witnessed anything remotely comparable to that one. The audience was silent. There was none of the friendly chatter which is usually heard before a meeting starts. There were no greetings, no one smiled.

The families of the Triangle victims were there, reminding us, if any of us needed reminding, of the recent

tragedy. The finest orators of the New York labor movement were there, among them Meyer London, later to become the first Socialist congressman from New York City. But more memorable, indeed unforgettable, was another speaker whose oratorical powers and great personal charm impressed me as perhaps no other man has impressed me since. He commanded the breathless attention of the audience with his first words.

Quietly, out of the memory of the days when he himself had been a factory worker, the speaker recounted life in the factories: the long hours, unsanitary conditions, fire hazards, unguarded and dangerous machines. And sitting there in that packed auditorium we all felt that this man was the spokesman of our unexpressed thoughts, a voice for the voiceless.

He spoke of the law of the sea by which the master of a vessel is always the last to leave a sinking ship. But the masters of industry, he said, were bound by no such honorable code. The masters of the Triangle Waist Company had locked the steel doors of the factory, had locked them and left the women and children, the crew of the factory, to their dreadful fate. The Triangle fire was the epitome of a thousand similar, if smaller, tragedies which had occurred over a period of many years. The life of the worker was constantly attended by fire, disease, mutilation under machines without safety devices. And now, as a result of the Triangle tragedy, we must make the cause of New York's workers known to everyone, to other workers, to city officials, to the legislators in Albany, to the country at large. . . .

America would listen to us if only we could find the voice with which to declare our wrongs and the will to declare them earnestly and constantly. Sympathetic editorials in the newspapers were good, but not enough. The governor must act, the legislature must live up to its reputed function of truly representing the people. The speaker ended with these words: "The greatest monument

we can raise to the memory of our 147 dead is a system of legislation which will make such deaths hereafter impossible."

The audience stood and cheered when he concluded, and since I had not caught his name when he was introduced I turned to my neighbor and asked who the orator might be.

Incredulously, the man replied: "Do you mean to tell me you've never heard Morris Hillquit before?"

Hillquit had been an immigrant factory worker, coming to America as a young man and working in the sweatshops of New York and, like so many other American emancipators, determined to get out and speak for those who could only stammer or remain silent. Worker, attorney, orator, theoretician, historian, Hillquit spoke and pleaded for a future where people would not be mutilated by machines, where girls would not leap to their deaths on bloody pavements, where money would not be superior to human lives, no matter how humble or obscure.

Others at that meeting at Cooper Union might have stirred the audience with demagogic oratory into an angry destructive mob whose actions might have been spectacular but fleeting. Hillquit, however, galvanized us all into public energy ready to work. The fight for more humane labor legislation was launched and in the weeks and years that followed I knew that the deaths of the 147 girls in the Triangle fire were not to be an utterly meaningless catastrophe.

Titanic

By Jack Lawrence

ATLANTIC OCEAN, April 14, 1912—Frank Deuprey and I were alone in the Ship News office at the Battery when the Titanic invitations arrived. A boy brought them down from the White Star offices on lower Broadway. The envelopes containing the invitations were about eight inches square and had been addressed by hand—like wedding invitations:

THE INTERNATIONAL MERCANTILE MARINE COMPANY
REQUESTS THE PLEASURE OF YOUR COMPANY
AT LUNCHEON
ABOARD THE NEW WHITE STAR LINER
TITANIC
PIER FIFTY-NINE, NORTH RIVER
AT
ONE O'CLOCK IN THE AFTERNOON
FRIDAY, APRIL 20, 1912

As Deuprey opened the invitation, a little square of tissue paper fluttered down and fell across his eyes. He brushed it aside.

"Ah-h-h!" he exclaimed. "Caviar and champagne being rushed to us across the Atlantic at twenty-four knots on the world's greatest liner. May God speed her on her voyage and bring her safely to port."

In Deuprey's ecstatic imagination, the *Titanic* was a golden treasure ship rushing to him across the seas with a

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mighty cargo of imported delicacies. Some dreams go up in smoke. Deuprey's went down in countless fathoms. All he saw of the *Titanic* was her lifeboats strung out astern of the *Carpathia* as the ancient Cunarder towed them wearily into Quarantine.

For months after the great ship had gone down, carrying with her all but 745 of her company of 2,340 souls, we ship-news reporters saw the finger of blame being pointed this way and that—but mostly at the captain who did not survive to defend himself.

In the Ships News office, the charge that Captain Smith was driving his ship along the North Atlantic steamer track at twenty knots with ice and fog all around him failed to arouse our indignation. Express liners with schedules to maintain had been doing the same thing for years.

The prospect of commanding the *Titanic* had depressed Captain Smith for many weeks before he ever saw that vessel's bridge. He was one of many British seafaring men who believed naval architects had gone a little mad in their effort to produce new masterpieces in bulk, luxury and speed.

Some of his contemporaries thought that Captain Smith was old-fashioned. He certainly looked old-fashioned with his rolling gait, his puckered eyes and his white beard. But he had his own following in the North Atlantic passenger trade. Clerks in the White Star offices used to say that many customers, coming in to book passage, would begin operations by asking for the ship commanded by Captain E. J. Smith. This was the man who commanded the *Titanic* on her fatal maiden voyage.

The voyage began at Southampton on Wednesday, April 10, 1912. Bands were playing, flags were flying and hundreds of persons on shore raised a mighty cheer as the world's greatest steamship cast off her lines. The cheer was drowned out by the rumbling blasts from the *Titanic's* brass throat—the familiar three blasts that to the initiated spell "Hail and farewell!" The *Titanic's* deep-throated

roar was taken up and answered by the whistles of a hundred other vessels.

Only one incident occurred to mar the departure of the great ship. Tied up alongside the flag-bedecked *Titanic* was the old American liner *New York*. As she lay there in the shadow of the *Titanic's* towering walls of steel, the little *New York* looked as though she might have been hoisted bodily in the new vessel's davits.

The first revolution of the *Titanic's* giant propellers created a suction under her overhanging stern that drew the old *New York* to her as though the smaller vessel had been merely a bit of driftwood. Two steel cables with which the American liner was moored fore and aft parted with loud reports and in a moment the ship was free and drifting into the whirling maelstrom under the *Titanic's* stern. The situation was observed from the wings of the *Titanic's* bridge and a signal stopped her engines in the nick of time.

The incident caused much merriment among the great liner's passengers. But in the ancient taverns of Southampton the old salts did not laugh. "A bad sign," they said. "A damned bad sign."

Many of the *Titanic's* passengers had originally booked passage on other vessels, but the new floating palace, built at a cost of nearly \$8,000,000, received so much publicity that they changed their plans at the last minute and flocked to the *Titanic*.

The facts printed about the new ship before her maiden voyage made it plain that she was in many ways entirely without precedent in ship construction. Much was made of the fact that a system of watertight compartments that could be instantly closed from the bridge made the ship unsinkable even though her entire bow or stern might be stove in.

When the *Titanic* made her triumphal departure from Southampton that fine April day she had eleven steel decks

that could be subdivided into fifteen watertight bulkheads in case of emergency. She carried a crew of 860 and had accommodations for 2,500 passengers. Four elevators were provided to carry passengers from deck to deck. She had a theater, several restaurants in addition to the main dining saloon, sun parlors, a winter garden, a palm arbor, two swimming pools, squash and tennis courts, a Turkish bath and a miniature golf course. Up on the boat deck there was even a spacious kennel for dogs traveling First Cabin.

When the *Titanic* was finally clear of Southampton shipping and straightened away on her first westward voyage a checkup by Purser McElroy showed that the ship was carrying a total of 2,340 persons. Later, in the White Star Line offices, I was to see another check-up of the *Titanic's* company. It revealed the grim fact that all but 745 had perished.

It was a happy and distinguished crowd that strolled the *Titanic's* marvelous decks that bright April day as the ship headed for the open sea at a stately clip. Had you mingled with the *Titanic's* crowd you could have chatted with Benjamin Guggenheim, head of the great Guggenheim mining interests; with John B. Thayer, vice-president of the Pennsylvania Railroad; with Charles Melville Hayes, president of the Grand Trunk and Grand Trunk Pacific Railways; with Isidor Straus, merchant prince and head of R. H. Macy & Company; with George D. Widener, Philadelphia traction magnate who had just purchased some world-famous paintings in Europe. You would have met John Jacob Astor, of course, and his pretty bride, the former Madeleine Force; and handsome Major Archibald Butt, military aide of President Taft.

With the exception of Mrs. Astor, not one of them would ever step ashore again.

For five days the *Titanic's* maiden voyage was peaceful and serene. They met some lively seas but the great vessel trod them under foot or tossed them contemptuously

aside. This unsinkable ship moved across the seas as though she were on a beautifully paved road—no pitching, no rolling, no vibration.

Far aloft, the *Titanic's* Marconi aeriels were making their debut on the air. From down behind the horizon came messages of congratulation and wishes of good luck to the new queen of the seas. Some wanted to know how fast she was going. Was she out to set a new record for the westward crossing? "Pretty soft berth for you, old man," they remarked to Jack Phillips, the *Titanic's* chief operator.

News of the *Titanic's* departure from England received quite a play in the New York papers, but after the first stories the liner faded out of the news. Nothing was expected to be heard of her until she reported herself by wireless, which she did at fifteen minutes after two o'clock on the morning of Sunday, April 14. The message was from Captain Smith to the New York offices of the White Star Line. He gave the *Titanic's* position as 1,285 miles east of Sandy Hook, reported all was well, and indicated that with continued fair weather he would pass Sandy Hook about four o'clock Tuesday afternoon and dock his ship early that evening.

Officers, crew and passengers were delighted with the ship's performance. She was after no speed records on this voyage. They would let her out on later trips after she was well shaken down and running smoothly.

On Saturday night there had been a concert and dance in the grand ballroom. Later, in the mahogany-paneled smokeroom, there had been champagne and Scotch and soda. A huge open fire, blazing there, felt good; outside there was a penetrating chill in the air—a wet, haunting chill.

The usual religious services were held in the ballroom Sunday morning and again in the afternoon when passengers joined in singing *Nearer My God to Thee*. Passengers who had been exercising on deck said they had seen small patches of drifting ice close to the ship. To seasoned trav-

elers this was not unusual. Liners on the northern express routes almost always encountered ice at this time of year. Sometimes even large bergs could be seen in the distance—drifting silently and stealthily southward in a diaphanous mist.

Although the *Titanic* had not yet sighted anything even resembling a berg, a sharp lookout was maintained. Two men were in the bows of the ship and two more in the crow's nest. British shipowners had not yet got around to equipping these men with binoculars. If they had, the *Titanic* might still be plying the North Atlantic passenger lanes.

Sunday passed quietly. Dinner was served in the middle of the day and during the long afternoon the decks were almost deserted. Many of the passengers retired early, for sleep comes easily at sea.

All day Sunday the temperature had been dropping steadily as the *Titanic* drew closer to the ice floes she had not yet sighted. In the midst of one of these floes rode the giant berg on which she was to strike. Throughout the day hourly tests of the water had been made but these, in the opinion of the officers, failed to indicate that icebergs were close at hand.

The weather was fine and clear; the heavens were ablaze with stars. At 8:55 Captain Smith came on the bridge and talked with his second officer. Both remarked the brilliance of the night. The sea was so calm that the ship had increased her speed from twenty-one to twenty-one and a half knots.

Captain Smith informed the bridge that he had just received wireless warnings of ice fields and bergs ahead. One warning had come from the *Titanic's* sister ship, the *Olympic*, headed east. Another was from the White Star liner *Baltic*, which had just passed a large berg accompanied by two smaller ones.

Captain Smith was not alarmed. If these ships had got through safely he saw no reason why the *Titanic* couldn't.

Leaving the second officer in charge of the bridge, the captain went below after leaving instructions to have the ship kept on her course. It was then 9:25.

A half-hour later the second officer was relieved by Chief Officer Murdock. The bridge thermometer showed thirty-one degrees—considered normal for the region through which the *Titanic* was passing. Murdock studied the latest wireless warnings. These gave the latitude and longitude in which icebergs had been sighted. He figured that at the *Titanic*'s present rate of speed the bergs would be visible from the bridge in about an hour.

It was Frederick Fleet, one of the two men in the crow's nest, who first sighted the fatal iceberg. He grabbed the telephone connecting the crow's nest with the bridge and shouted desperately: "Iceberg a point on the starboard bow! Iceberg ahead!"

Fleet had hardly dropped the phone before he felt the great ship swerve under him and saw her bow edge off to port, point by point. The reaction on the bridge had been prompt and swift—but not swift enough. As the liner veered to port, a slight impact was felt, followed by a scraping sound along the starboard side. It was so slight that the officers on the bridge heaved a sigh of relief. Down below, the passengers—all but one—were unaware that anything unusual had taken place.

In their cabin on B-deck on the starboard side were Mr. and Mrs. Frederick M. Hoyt of Larchmont, N.Y. Hoyt was a naval architect on whose board the lines of many famous vessels had been drawn.

Mrs. Hoyt was in bed and her husband was in his pajamas and bathrobe reading when he felt the ship rock slightly and heard a far-off grating sound that seemed to start somewhere under the starboard bow and run along the ship's side. To the sensitive ear of the naval architect and sailor that sound had a sinister significance. It fastened his mind on only one thing. Ice.

Putting aside his book, Hoyt dressed hurriedly, putting

on his warmest clothes. Then he awakened Mrs. Hoyt and said: "I think this ship is in trouble. I'm going up to the bridge to see Captain Smith. Dress quickly, and wear your warmest things. Then wait here until I come back. Don't leave this cabin."

Hoyt didn't encounter a soul as he hurried along the long corridor and stepped out on deck. As he reached the deck an officer and several sailors passed him running aft. By the starboard companionway he made his way to the bridge. He noticed that the *Titanic* was rapidly losing headway and he thought he could detect a slight starboard list.

On the bridge the first man he met was Captain Smith, who wasted no words. "I think we're in a bad way," he said frankly. "Fouled an iceberg. I have ordered all passengers into the boats. No. 2 boat on the starboard side will be leaving in five minutes. Get yourself and Mrs. Hoyt into it immediately."

Returning to his cabin, Hoyt found his wife already dressed. He stopped only long enough to fill a pint flask with brandy. This he gave to his wife and guided her to the No. 2 lifeboat.

The scene on deck had changed, but nobody seemed alarmed. Passengers, many still in evening clothes, seemed to regard the situation as rather humorous. The cry of "All passengers into the boats!" seemed a little ridiculous. What was the use of being lowered away in a lifeboat? They would only have to be hauled back again when the officers remembered that the *Titanic* was unsinkable.

It was not yet midnight. A number of passengers returned to the smokeroom where they had left half-finished drinks—but the drinks were beginning to slide off the tables. Everything appeared to be at an unseemly slant—and the slant was increasing.

Outside, officers and crew were having difficulty herding reluctant passengers to the boatdeck. Many still seemed to regard the whole thing as a chilly midnight farce. After

the passengers were finally driven to the gunwales of the boats many of them refused to get in although the *Titanic* was now listed so sharply to starboard that it was almost impossible to lower away on her port side. Her head was also settling deeper and deeper into the water. But her lights were still burning brilliantly and from somewhere came the distant strains of the orchestra.

At the lifeboats the women were giving the crew trouble. Some flatly refused to get into the boats. Others said they would go if their men could go with them, but the officers would not permit this. So they argued while foot by foot the ship's head settled deeper and deeper into the sea.

Elderly Isidor Straus argued quietly with his wife. An officer had hold of her arm ready to help her into one of the boats.

"Won't you please go?" her husband begged.

She looked up at him and said, "No."

They walked off together along the slanted deck and entered the main companionway. They were not seen again.

Some of the boats were sent away only half-filled. Once on the surface of the sea, the decks of the *Titanic* were still so high above them that the occupants of the boats believed that they were the ones in real danger. They waved forlornly at the white faces that lined the rail far above them—the faces of the *Titanic's* dead.

At boat No. 2, Hoyt had been giving two ship's officers a hand in helping women and children over the side. When the order came to lower away there was still plenty of room in the boat but no more passengers could be induced to enter it.

"You'd better get in, Mr. Hoyt—plenty of room for you," an officer said.

Hoyt shook his head. "No," he said, "I'll give a hand with the other boats. You'll probably need it."

"Stand by to lower!" the officer shouted.

The davits groaned and creaked as the boat was pushed over the side and lowered slowly into the sea.

Mrs. Hoyt had been the last woman to enter the boat. It is likely that she was the last woman to leave the *Titanic's* deck.

Frederick Hoyt stood at the rail watching the big double-ended craft as it rose and fell in the long groundswell. He looked aft along the *Titanic's* deck and saw that all the other boats were either free of the ship or being lowered. Down below him he saw the boats idling near-by, many with empty seats, their crews gazing up, fascinated, at the great stricken vessel.

By this time the *Titanic's* bow was far down in the water. Hoyt looked about him. Officers and passengers had disappeared from that part of the boat deck. He was alone. Down below him the lifeboat with his wife in it was still lying there; it still had many empty seats. Hoyt removed his overcoat. Climbing over the rail, he stood poised for a moment; then he waved to his wife and dropped feet-first into the sea.

The water was cold but it was marvelously buoyant; he came up almost as fast as he had gone down. Close at hand was one of the *Titanic's* boats. A few swift strokes brought him close enough to grasp the gunwale. In another moment he was hauled aboard and his wife's arms were about him as she pressed the brandy flask to his lips.

Those in the boats could see the *Titanic's* stern rising steadily as her bow gradually buried itself. Strange noises were coming from inside the ship—muffled explosions, short, sharp reports like pistol shots. Many in the boats thought that the bow of the 900-foot ship would strike bottom before her stern went under. They did not know that the ocean's bottom in that locality was more than two miles below the keels of the tiny craft in which they were floating.

As the great rounded stern rose toward the perpendicular, the muffled uproar within the ship increased. Gravity

was hurling every movable object down into the sinking bow—tons of heavy furniture, tables, hand-carved beds, grand pianos, oil paintings, luxurious leather lounges, passengers' trunks, tons of china and silverware, hundreds of deck-chairs and a wild, crashing confusion of ship's gear.

The hundreds of chalk-white faces that had lined the rail suddenly disappeared from view. Losing their footing on the steeply slanted deck, the doomed slid down into the descending bow like beads off a broken string. A great wailing cry arose as they dropped from view—a last despairing note that was to haunt the memory of *Titanic* survivors for years.

One by one the four giant buff-colored funnels moved downward and disappeared majestically into the sea. The stern, with its huge bronze propellers turned skyward, seemed to hesitate a moment and then it, too, vanished in a mighty upheaval of frothing air bubbles. The *Titanic* was gone, but for hours afterward those bubbles continued to break the surface of the sea—creating a brilliant phosphorescent disc in which floated the bodies of her dead.

Drifting among the drowned was the body of the man to whom all those in the boats were to owe their lives. Jack Phillips, the chief wireless operator, had flashed out his tragic call for help before the sea came up to strangle his instrument. He remained at his key too long to save his own life but it was his hand that beat off death for those in the boats.

The *Titanic's* voyage had been a busy one for Phillips and his assistant, twenty-two-year-old Harold Bride. Bride was asleep when the *Titanic* scraped the fatal berg—asleep in a small cabin adjoining the main radio room. Worn out with hours of continuous sending, he was restless and slept fitfully. For a long while he lay awake listening to Phillips sending commercial messages to Cape Race. They would be relayed from there. Silly and pointless a lot of the messages sounded as Phillips rapped them off. One man wanted a box reserved for a Broadway hit, another asked for com-

plete details on the redecorating of his Newport villa. A woman asked her lawyer to meet her at the pier.

Unable to sleep, Bride decided to give Phillips a hand. Slipping on a bathrobe, he went into the sending room. He was standing over his chief suggesting that he lay off for an hour or two when Captain Smith appeared suddenly in the doorway. "We've struck an iceberg," he said. "Be ready to send out a call for assistance. But wait until I give the word. It may not be necessary."

Phillips and Bride were amazed. Neither had felt the slightest jar.

Ten minutes later Captain Smith again appeared. The command he gave was short, sharp and crisp: "Send that call for assistance!"

Phillips began tapping out the international distress signal—the code letters C.Q.D. As he tapped out the message, he looked up at Bride and said: "Nobody will ever believe it."

The steamship *Frankfort*, hundreds of miles away, was the first to pick up the *Titanic's* flash. Her operator apparently couldn't believe his ears, but said he would tell his captain about it. Then he closed his key and the *Titanic's* operators heard nothing more from the *Frankfort*.

A moment later Phillips was talking to Thomas Harold Cottam, wireless man on the *Carpathia*. With the *Titanic's* distress call came the message: "Come at once—we have struck an iceberg." Then followed the ship's latitude and longitude, repeated several times.

In his cabin abaft the *Carpathia's* bridge, Captain Arthur H. Rostron was preparing to take advantage of a clear night and a smooth sea to get a little sleep. Lying in his berth, he could feel the gentle vibration as the old ship plodded wearily on. He could smell the mixed fumes of stale wine, garlic and spaghetti sauce with which the vessel seemed saturated—the inevitable odors of the Mediterranean trade. He thought of how clean and new the *Titanic* must smell.

Captain Rostron fell asleep thinking of the *Titanic* reeling off the knots on her triumphant voyage to New York. Bands would be playing when she docked—flags flying, ships blowing shrill salutations to the new queen of the seas. There would be a state dinner—a visit from the Mayor.

There was a sharp knock on the door. It was pushed open as he reached up and switched on the light. Standing there was the first officer with Cottam, the Marconi man, beside him.

"We have received a C.Q.D. from the *Titanic*, sir," the officer said. "She seems to have fouled an iceberg. She is asking for immediate assistance."

Captain Rostron gave the orders that turned the *Carpathia* from her course and started her lumbering and wheezing toward the *Titanic*. But there wasn't a man among the *Carpathia's* officers who thought for a moment that the great liner was actually sinking.

The *Carpathia's* log was to show that on her historic dash to the aid of the *Titanic* she was at one time staggering along at a fraction under eighteen knots, a speed she had never attained before and would never do again. Her steel plates groaned and shuddered under the tremendous vibration. She coughed and she panted and she wheezed—and strange hissing sounds came from her hold. Her passengers, startled by this midnight upheaval, scrambled out of bed and demanded to know what had happened. Where were they rushing to?

The ship's officers had no time to explain. A new message had come through from the *Titanic* saying she was sinking fast. Captain Rostron had ordered cabins made ready for survivors—if there were any. The *Carpathia's* shabby little smokeroom was converted into a sick bay and stocked with blankets and medicines. On deck the lifeboats were swung out and made ready for lowering.

On the *Carpathia's* bridge the officers were sweeping the horizon with their glasses as the ship surged toward the

spot where the *Titanic* had last reported herself. The great hull of the White Star liner and her four towering funnels would be visible a long way off.

It was not until they sighted the lifeboats, white specks on a gently heaving sea, that the *Carpathia's* men realized that the *Titanic* was gone. Only the lifeboats and giant air bubbles marked the spot where the queen of the North Atlantic had met her end.

It was 4:10 A.M. when the *Carpathia* hove on the scene and the approaching dawn was throwing a pale, ghastly light over the silent boats. Three and a half hours later the last of the *Titanic's* living passengers had been lifted aboard the Cunarder and she started her slow voyage to New York, the empty boats of the lost ship strung out in a long line astern.

It was not until 8:30 Monday evening that P. A. S. Franklin, head of the International Mercantile Marine Company, owners of the *Titanic*, got around to admitting that the great ship was lost. All that day officials of the White Star Line had tried to appear optimistic. They continued to point out that the *Titanic* was unsinkable and would be able to make port under her own steam.

Then came the statement from Franklin that the ship had gone down.

The *Carpathia's* arrival in New York Harbor was an event that gripped the entire city. Veteran reporters could remember other big news stories, but here was one that occupied entire editions to the exclusion of everything else. Even paid advertising was thrown out. In addition to the facts printed in the papers, lists of the saved, the known dead and the unaccounted-for were posted in the lobbies of hotels, theaters and in public buildings.

Hundreds waited at the Cunard Line pier for the *Carpathia* to arrive. By seven o'clock in the evening the crowd outside the pier was rapidly getting beyond the control of the police. Those with pier passes found it almost impossible to battle their way through the mobs of the morbidly

curious. Finally police lines were established as far east as Ninth Avenue. On the lower deck of Pier 60 the Red Cross and Salvation Army had established bases. Drawn up outside were ambulances from every hospital in the city.

The *Carpathia* appeared to be taking her time, approaching the end of her historic voyage at a slow and mournful pace. It was 6:10 in the evening when she was reported passing Sandy Hook and an hour and a half later when she nosed into Quarantine and paused long enough to take on doctors and government officials.

It was after eight o'clock when the *Carpathia* passed the Battery where the seawall was lined with silent thousands. At a snail's pace, she crawled up the North River. Off her pier she stopped, her propellers turning over just fast enough to hold her nose into the ebbing tide. After what seemed like an endless wait, a tug hove under her stern and relieved her of the trailing lifeboats. Then the boats in the davits were lowered slowly, inch by inch, and finally the tug started upstream with them to the White Star Line pier where the *Titanic* herself would have docked—fifteen white orphans of the lost mother ship.

With agonizing slowness the *Carpathia* was warped in on the north side of her pier and made fast. A section of rail was removed from her main deck and after another long wait longshoremen hoisted a gangway into position and finally made it fast. The *Carpathia's* deck was jammed with silent men and women, her own passengers and those from the *Titanic*. The only sound was that of anguished sobbing—coming from the pier.

The first *Titanic* survivor to come down the gangplank was a woman, a sailor's oilskin coat thrown over her shoulders. At the foot of the gangplank a man faced her with outstretched arms. She collapsed in his arms and he carried her away, a Red Cross nurse trotting after them.

The woman was followed off the ship by the rest of the

Titanic's company, some giving way to their emotions while others tried grimly to smile through their tears.

Few of these people had anything but a confused idea of what had happened aboard the *Titanic*. Those who had remained calm and collected while the great ship was sinking under them seemed now to have completely lost their bearings. The fact that they were at last safe ashore seemed to bewilder them. Not one could tell a clear and connected story. The average *Titanic* survivor that night acted like a person trying to piece together the hideous details of a grisly dream.

For at least ten days after the *Carpathia's* arrival the echoes of the *Titanic* story continued to disturb the peaceful atmosphere of the Ships News office. The reporters had long ago wearied of the subject. To them, too, it seemed like some maritime phantasm that had never actually happened.

Frank Deuprey, enjoying his first hour of quiet leisure in many days, resurrected his tattered copy of Mrs. Browning's *Sonnets from the Portuguese* and opened it languidly. A white square fell from its pages and the reporter picked it up—

THE INTERNATIONAL MERCANTILE MARINE COMPANY
REQUESTS THE PLEASURE OF YOUR COMPANY

AT LUNCHEON

ABOARD THE NEW WHITE STAR LINER

TITANIC

PIER FIFTY-NINE, NORTH RIVER

AT

ONE O'CLOCK IN THE AFTERNOON

FRIDAY, APRIL 20, 1912.

Deuprey dropped the invitation into the old iron stove and turned to his book.

Fury on the Great Lakes

By Walter Havighurst

GREAT LAKES, November, 1913—The government weather forecast for the upper lakes as published in Cleveland on November 8, 1913, was: "Snow or rain and colder, Saturday, with west to southwest winds. Sunday, unsettled."

There was nothing to worry about in that forecast, but Milton Smith, assistant engineer of the steamer *Charles F. Price*, had an uneasy feeling. It was only three weeks till the end of the season, when the *Price* would tie up for the winter and the crew would receive their bonus along with the regular pay. But there was that gnawing in Milton Smith's mind. Despite the protests of John Groundwater, his chief engineer, he paid off the *Price*, packed his bag and walked ashore. Twenty-seven hours later the *Charles F. Price* went down with all hands. In the next three days forty vessels were wrecked and 235 lives were lost on the Great Lakes.

On Saturday morning, November 8, an early winter storm struck Lake Superior. Vessels remained in port or kept under shelter of land until its violence was spent. Early Sunday morning the wind died to a breeze and the sea heaved slowly. Ships that had waited in the St. Mary's put out onto Lake Huron. Schedules had to be fulfilled even if the wind kicked up again. The crews battened down, stretched their life lines from the forespar to the boiler-room bulkheads, and watched the slate-colored sea.

From The Long Ships Passing by Walter Havighurst. Copyright 1942 by The Macmillan Company and used with their permission.

Far out on the plains of Manitoba a new wind was growing. At the weather stations of De Tour and Mackinac, at Cheboygan and Bay City and Harbor Beach, storm signals were flying, the red flags flat against the hurrying sky.

At noon the wind freshened and changed direction. It swung abruptly from northwest to north, with increasing pressure, and then quickly to northeast. From that quarter it struck. Suddenly it was a hurricane, blowing at eighty miles an hour. Vessels on Lake Huron headed for shelter of the east shore, but the wind changed direction and beat them off their courses. Seas poured over cargo decks and pounded at the upper works. The wind brought a fury of snow, and waves ran higher. The most violent storm in history had struck the lakes.

It was a storm of cyclonic character. The wind swung from one quarter to another and the seas were a battering confusion. Masters who survived the storm said they had never experienced such violence, waves running one way and the wind another, with the ship assaulted between them. It lasted all afternoon and all night with never-slackening fury. Winds of that velocity had never held for longer than five hours, but this storm maintained for sixteen hours a velocity above sixty miles per hour. Waves rose to unprecedented heights. Many masters stated that waves thirty-five feet high, following in quick succession, often three in a sequence, hurled and battered their vessels. In that ordeal eight staunch ships totally disappeared from Lake Huron and two from Lake Superior. There were no survivors to tell of the punishment those ships took before they foundered. In addition, two barges sank in Lake Michigan, and a lightship was lost in Lake Erie. Twenty-six other steamers were driven ashore and mangled by the terrific seas.

The storm lashed every mile of shore from Duluth to Chicago and Buffalo. Beaches on Lake Huron were destroyed for scores of miles, gutted for hundreds of feet

above the normal shoreline. At Chicago, whole sections of the newly made shore at Jackson Park were washed away. The Chicago Park Commission had spent eight years in construction of the land; it was destroyed in as many hours. In one of the Chicago water cribs, windows twenty feet above lake level were shattered and heavy furniture was licked out like driftwood. Miles of sea walls, terraces and piling washed away from Chicago's waterfront. At Milwaukee, a massive breakwater, part of the new harbor project, was battered to rubble. In Cleveland, twenty-one inches of snow blanketed the city and communications were cut off for two days. At the Buffalo harbor entrance, the lightship was torn from its moorings and no trace of it was ever found. Another lightship at the entrance to Port Huron was torn loose and thrown upon the Canadian shore.

But the full fury and destruction were borne by the vessels in open water on the long traffic lanes.

The steamer *L. C. Waldo*, loaded with iron ore at Two Harbors, was midway across Lake Superior when the wind struck. Green-gray seas swamped her deck and the driving spray froze over all her upper works. The windows of the pilothouse iced over. Then darkness came, and the wind screamed higher.

At midnight Captain Duddleson, a native of the Soo, was bent over his chart in the pilothouse, laying a compass course for Manitou Island, off the point of Keweenaw. His hope was to gain the island's shelter from the blasting wind. Thunderous seas smashed at the wallowing vessel. Each time, the ship staggered and drove on. But a dark sea, masthead-high, was gathering. It struck with the solid weight of a hundred tons of water. The captain and his wheelsman clung to a stanchion as the bulkheads gave way. Sea water poured over them. There was a wrenching roar. The ship lurched and straightened. But her pilothouse was gone, wiped off like a crate of cabbages from her deck. Worse than that, her compass was demolished and her

steering gear was damaged so that she could not maintain a course against the wind.

Captain Duddleson sent his wheelsman aft, over the pitching ice-sheathed deck, to get a compass from the lifeboats. For four hours they steered the *Waldo* by hand compass in the flickering light of a hurricane lantern. With the wind dead aft, seas broke over her stern till only the ship's stack was visible, pouring black smoke into the storm of snow.

With broken steering gear and hand compass, Captain Duddleson almost made his desperate passage between Gull Rock and the point of Keweenaw. He held his course to within a half mile of his reckoning. But that half-mile was ruinous. Just before daylight the *Waldo* fetched up on a reef running out from Gull Rock.

Now the seas battered her with an insane fury. Under those terrible blows the after deckhouse began to crumple. The crew went forward, clinging to the life line while the waves broke over them. For two days and nights they crouched in the battered forward house. They burned the wooden furnishings in a bathtub to keep from freezing and ate the last of their provisions. On the third day the wind abated and the seas heaved with their spent anger. Help came from the Coast Guard crews of Portage and Eagle Harbor.

Other ships fought the same fight, with no survivors to recount their struggle. The *James Carruthers* was a big new freighter, commissioned a month before. On her third voyage, loaded with grain, she stood out from Fort William, between Pie Island and the humped form of the Sleeping Giant. Then a wind came up and hurried her across Lake Superior. She waited a few hours in the St. Mary's River till the weather was reported breaking. Out into Lake Huron she sailed on that dreadful Sunday. She was never seen again. Some twisted wreckage and the bodies of a few of her men were found on the ravaged Huron shore.

To Captain Paddington and seventeen men in the steamer *Turret Chief* came one of the most harrowing ordeals in all lakes history. The *Turret Chief*, a wooden ship of 4,000 tons, bound light for Fort William, was driven off her course and disabled by the Saturday gale. After drifting fifty miles she was cast up on the rugged coast of Keweenaw Peninsula, six miles north of Copper Harbor. The seas drove her high on the rocks and left her wedged there with the wave crests lashing at her. The crew, dead beat after hours of struggle, had fallen asleep in their bunkrooms just before the ship piled up. They tumbled out to find themselves hard aground and the old wooden hull groaning in every joint. She would break up at any minute. Without time to gather food or clothing they threw lines over the side and went down like spiders. They picked their way over the storm-swept rocks. On the wooded shore they beat life into their numbed bodies and built a shelter of boughs and driftwood. Here, without food or fire, with a blizzard raging around them, they huddled from Saturday night till Monday morning. They grew grim with hunger and gray with cold. Eighteen men were crouched in that bleak shelter. They avoided each other's eyes, but the knowledge of death was in all their faces. Then a man stared incredulous over the desolate shore. A file of Indians came tramping over the snow. Two hours later Captain Paddington and his men were drinking coffee around a barrel stove in Copper Harbor.

Meanwhile, the steamer *William Nottingham*, bound down from Fort William with a cargo of grain, fought for her life on Lake Superior. After forty-eight hours of the punishing seas she was still afloat. But her bunkers were empty. The coal-passers raked out the last corner banks of fuel and the firemen threw it into their dying furnaces. The steam had dropped in the gauges and the *Nottingham* was swinging in the long seas. Without her engines she would be hurled on the rocks of Coppermine Point. Desperate, her master ordered his crew to open the hatches.

While the seas washed in they shoveled grain up on deck and down the bunker hatch. In the boiler rooms the shovels clanged again as wheat went into the fire doors. The flames smoldered and hesitated. The drafts whined and the firemen raked with their slice bars. At last the heated wheat took fire; there was a low roar under the boilers and the drafts whined higher. The gauges lifted a little. Soon the *Nottingham* swung round till the wind was on her quarter. Stubbornly she labored into Whitefish Bay. It looked as though she would make the Soo in safety. But she struck a shoal four miles east of the steamship lane. There the seas threatened to break her to pieces. Three of her men perished while trying to launch a lifeboat. A few hours later the Coast Guard took the rest of them to shore.

Two big freighters floundering through the ravenous seas of Lake Huron were lost just thirteen miles from the shelter of the St. Clair River. They were the *Regina* and the *Charles F. Price*. After the storm was over, the *Price* was found with her 10,000-ton hull floating bottomside up a few miles off the Huron shore. It was days before anyone could identify her.

Milton Smith, who on November 8 had an uneasy feeling, had stayed ashore in Cleveland when the *Price* cast off her lines. Five days later he arrived in Port Huron to identify his former shipmates. The first body he recognized was that of John Groundwater, the *Price's* chief engineer.

"Are you sure?" demanded the coroner.

Smith was certain. He knew John Groundwater well, even after Lake Huron had put its somber mark upon him.

"John Groundwater, chief engineer of the *Charles F. Price*," the coroner repeated.

Smith nodded.

"Well," said the coroner, "this man had one of the *Regina's* life preservers wrapped around his body."

There was only one explanation. The *Regina* and the *Price*, laboring to keep afloat, had collided in the storm's fury and foundered together. Men from both crews strug-

gled in the water. Life belts were thrown down and they floundered into them with their last numb movements. Bodies of the men in the two crews were cast up together on the shore, some even clasped in each other's arms. Herbert Jones of Superior City, the *Price's* steward, was found with his apron frozen stiff around him, as though he were about to prepare a meal.

There was nothing more to do for those chaps, after the bodies were identified. So Milton Smith went back to Cleveland. He still had an uneasy feeling.

Tragic Queen of the Lakes

By Harriet K. Nye

The drawbridges across the Chicago River split and reared upward, applying an abrupt tourniquet to the traffic circulating in and out of Chicago's Loop. On the water below, a squat tugboat was towing the trim U.S.S. *Wilmette* to its graveyard in the south branch of the river. The traffic waited.

At the Clark Street bridge a newspaper cameraman waited, too, for a picture of this funeral cortege which in the autumn of 1946 was passing the spot where, thirty-one years before, under another name, the *Wilmette*—alias the *Eastland*—had toppled on its side.

In number of lives lost, the capsizing of the *Eastland* was the third costliest disaster in U.S. maritime history. For grisly drama the *Eastland's* story is unmatched. In 1915 even Austria-Hungary turned its attention from battle-torn Europe to offer condolences.

It was in 1903 that the excursion steamer *Eastland* was first launched on its career as a Great Lakes pleasure boat. Its builders boasted that it was as staunch and luxurious as any ocean liner. The *Eastland* was indeed tall and sleekly lined—269 feet long, thirty-six feet in beam, with twin propellers.

On its hurricane deck the ship carried a steam calliope which sent the melodies of *Bedelia* and *The Good Old Summer Time* bouncing over the waves. The ship could do twenty-two miles an hour, a figure which meant something to a public beginning to be motor-minded and speed-

conscious. Altogether, the *Eastland's* future as a gay pleasure boat seemed assured for at least forty years.

Then, in 1914, the *Eastland*, which had operated out of Cleveland on Lake Erie, appeared on Lake Michigan. Purchased by Chicago interests, she was now owned by the St. Joseph and Chicago Steamship Company, captained by Harry Pedersen and ready to serve the holiday moods of the Middle West. Still trim and speedy, the *Eastland* was at that time an eleven-year-old "youngster" with a past pleasantly filled with romance and moonlit excursions, though rumors of the ship's misbehavior occasionally drifted about the lake front.

Early on the morning of July 24, 1915, employees of the Western Electric Company trooped down to the Clark Street dock in Chicago where the *Eastland* was the first boat to load and the dock was still crowded. On board a band was playing loudly. Many women took their children below into the cabins. Ten girls settled down for a party in one of the staterooms. But most of the carefree voyagers remained on deck, watching the sailors cast off, calling good-bye to those on shore. Then at 7:20 A.M. the gang-plank was hauled away.

The stern line slacked off. Almost immediately the passengers noticed a strange slant to the decks. The *Eastland* rolled slightly and then stopped. Some who had been on steamships before frowned and appeared worried, but land-lubbers jostled one another and laughed. The music faltered.

The boat wobbled again. This time the list increased. Deck chairs began sliding to the port side. A refrigerator broke loose and toppled. A woman's scream was followed by a frenzied chorus of shrieks. Then the voices of the ship's officers, shouting a belated warning to the passengers, were lost in a bedlam of noise.

Thrown from their feet, passengers clawed for a hold on the smooth, slowly upending deck. Husbands shouted frantically to their wives. Mothers cried out to their chil-

dren. Helplessly everyone slid and tumbled and struggled against the port rail.

Joe Brozak was standing on the *Eastland's* deck with three of his party when the boat began to topple. With his friends Joe started to fall toward the port side. Then abruptly his fall was checked. His coat had caught on a nail. While his companions drowned before his eyes, Joe Brozak was held fast with his head just above water.

H. A. Thayer was also on the upper deck with his wife and two children. All of them were tossed into the Chicago River. Thayer disappeared, but Mrs. Thayer, a good swimmer, managed to clutch her children, the boy with her right arm, the girl with her left. It was a fierce struggle trying to keep three heads above water. Then Mrs. Thayer became aware of a growing numbness in her left arm. It went slack, and the horrified mother saw her small daughter slide beneath the surface.

The scene inside the boat was even more terrible. Here there was no escape. Mothers and children were hurled against the inner walls of their cabins as the *Eastland* settled on its side at the bottom of the river. The water rose quickly in the boat.

One woman felt herself sucked below the water. She fought her way back to the surface in time to glimpse two hands reaching through a porthole. Clutching those hands, she was hauled to safety, leaving her husband and son lost in the suffocating depths below.

The passengers on deck fared better. Of the hundreds hurled into the river, those who could swim struck out for shore only a few yards away. Others clung to chairs and loose pieces of wood that had floated overboard. From the steamer *Theodore Roosevelt*, tied near-by, life preservers were thrown to the survivors thrashing about in the water.

In the melee more than a thousand persons reached safety. Just a few feet from shore were the drowned and drowning while in the background, like a stranded whale, the *Eastland* lay with her starboard side flat about fifteen

feet above water. It had taken only a few minutes—between five and fifteen—for the ship to topple.

Sirens added to the hysteria as firemen and police rushed to the dock. In a rowboat city policeman Sessher began picking half-dead bodies out of the water and bringing them to shore. He kept score until he reached fifty.

A small army of doctors arrived. Pulmotors were set up, and the steamer *Roosevelt* became a morgue with 150 dead, most of them women, lined up on her deck. In a drizzling rain priests administered last rites to the dying. Department stores sent blankets to warm the shivering survivors.

Soon spectators were drawn to the disaster in such numbers that the Clark Street bridge was closed for fear the weight of the crowds would cause it to collapse. A movie cameraman dashed up to grind out a record of the scene. Business south of Water Street was halted and the buildings pressed into service as morgues, the Armory serving as a central morgue.

When the surface of the water had been cleared of living and dead, another phase of the rescue work began. Men with blowtorches scrambled up the sides of the great silent coffin. They cut holes through the sheet of steel that lay above the water, and divers let themselves down into the boat's interior.

What they found there was heart-rending. Mothers drowned beside their babies, bodies stacked on top of one another. Of the ten girls who were partying in the state-room, nine were dead. A diver, submerged for an hour, brought up five young girls and three babies.

On shore the process of identification proceeded. Six hours after the accident, rescuers were still taking bodies through the holes in the hull. By 2:00 P.M., 679 bodies had been recovered, and many were still missing.

After the holes in the hull were patched and the *Eastland* righted, the grisly task of recovery continued. More

dead were found inside. Then the tally was taken: 812 lives lost! Twenty-two entire families wiped out!

Who was to blame?

Judge Kenesaw Mountain Landis headed the investigation. A grand jury held officials of the steamship company, Captain Pedersen and his chief engineer for manslaughter. Theories were exploded as quickly as they were advanced. It was said that there had been trouble with the water ballast compartments. Some quarters claimed that the ship had been overcrowded. It was even said that the people themselves had capsized the boat by rushing to one side.

Then, like troublesome ghosts, old rumors came to life. In the late summer of 1910, the *Cleveland Plain Dealer* had carried an ad which by innuendo suggested that all was not shipshape on the pleasure boat *Eastland*.

The ship's Cleveland owners grandly announced that they would give \$5,000 to anyone who could prove that the boat was not the staunchest, fastest on the Great Lakes. No record shows that the owners were taken up on their offer. Perhaps the ad was not enough to bolster the ship's reputation, because four years later the queen of the excursion boats was sold and transferred to Lake Michigan.

Then a reputable lake captain, John Morrison, came forward to tell how the *Eastland* had balked, snapped her ropes and almost toppled at the docks two days before the fatal sinking. That definitely put the seaworthiness of the ship under scrutiny.

By the mayor's proclamation Chicago went into a day of official mourning. Excursion trips vanished from the lake. And the newsreel of the tragedy, which the cameraman had so laboriously ground out in the rain, was banned in many towns because the city fathers disapproved of "commercializing on the grief of our neighbors."

Gradually the disaster passed from the first simple stage of heartbreak, personal and public, into the complicated heartbreak of court procedure.

In the meantime the *Eastland* was put up for sale, since her attempted suicide in the Chicago River would forever bar her from the pleasure lanes. The Government put in its bid, and the *Eastland* passed into the possession of the Navy.

From stem to stern the boat was reconditioned. Then, rechristened the U.S.S. *Wilmette*, she began a second career as a naval training ship. Her berth was the pier of the Naval Reserve Armory on the inner harbor at Chicago within sight of the spot where she had ended her life as a pleasure craft. But if the *Eastland* was able to forget her past, the public was not.

In the summer of 1935 the Cleveland *Plain Dealer* carried the headline, "Eastland Case Bobs Up Again." This promised to be a farewell performance, because the court held that the steamship company was not liable. The boat, this court said, was seaworthy. It added a few lines which would end for all time that particular controversy. The responsibility for the sinking was laid upon an engineer who had neglected to fill the ballast tanks properly.

And that was that for another eleven years—until a small beetle of a tug hauled the U.S.S. *Wilmette* past the Clark Street bridge and the scene of the half-forgotten tragedy. Once again the *Eastland* was in the news, but the spotlights and fanfare were missing as the old ship was led to the executioners in the scrap yard.

Kidney Pills Wreck a Train

By Stewart H. Holbrook

IVANHOE, IND., June 22, 1918—It is safe to say that no one connected with American railroads in 1918 ever in his wildest moments thought of kidney pills in relation to disaster on the rails.

The tragedy happened just before dawn of the clear and star-flecked night of June 22. The second section of the train hauling the Hagenbeck-Wallace circus left Michigan City, Indiana, with orders to detour onto the Gary & Western road at Ivanhoe. The train had fourteen flatcars, seven stock or animal cars, four sleepers and a caboose. All cars were of wood, the sleepers being rebuilt old Pullmans with three tiers of berths, dimly lighted by lanterns hung above the center aisles. Although it was three o'clock in the morning, Charles Dollmer, circus manager, was still working over the show's books. The berths were filled with performers and roustabouts, all getting the sleep they would need for the show in Hammond next day.

Miss Rose Borland, the featured equestrienne who was said to receive \$25,000 a season for her work on the backs of Hagenbeck-Wallace's wonderful horses, had a berth to herself. So did Hercules Navarro, The Strongest Man Since Sandow; and Joe Coyle, boss clown, whose wife and two babies were in an upper. Another of the sleeping cars was crammed double with the pretty and agile members of Hagenbeck-Wallace's ballet of "100 Dancing Girls, Count Them."

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Just east of tiny Ivanhoe, doubtless named by some Hoosier lover of the Waverly novels, Conductor R. W. Johnson of the circus train thought he caught the aroma of an overheated journal. He signaled the engineer to stop, and the train halted a few feet from the crossing of the Elgin, Joliet & Eastern. Flagman Trimm promptly got off and went back to protect the rear of his train.

In the meantime, what had been a troop train but was now empty of soldiers had cleared Michigan City twenty-seven minutes after the circus had pulled out of there. The margin was large enough for almost any contingency that a railroad man could have conjured up. The night was quite clear. All signal lights were showing. Jogging along at around thirty miles an hour, the trooper passed, some two miles east of Ivanhoe, an automatic signal set at caution. It did not even slow its pace. Soon it came abreast of and passed another automatic signal, this one shining bright crimson. On it pounded, and Flagman Trimm could hardly believe his eyes. Here he was, well back from his own train, watching a big headlight coming swiftly at him. He knew it must have already passed a caution signal. Now he saw it pass a red signal.

I can idly put myself in Flagman Trimm's place and wonder what I would have thought to see that dazzling beam coming straight and true down the track toward me, and to feel the tremble of the ties and the ground, to hear the singing of the rails, to know that close behind me was a cargo of humanity and another cargo of strange beasts from the outlands of the earth. Being in Flagman Trimm's place, I should have been a railroad man and thus have taken in the full horror of it, indeed the hideous knowledge that it simply could not happen, that it must be some form of insane hallucination that had suddenly taken charge of all my faculties.

It must have been a terrible moment in Flagman Trimm's life. There he stood, helpless now except for his

own efforts. He put them into use at once. He swung his bright red lantern as he had never swung it before—swung it wildly in great arcs, swung it desperately and, at last, hopelessly. This mad and possibly illusionary train came pounding on, relentless, certain, never slackening. In a last effort as the trooper passed him, Trimm hurled a flaming red fusee plumb into the cab of the locomotive. An instant later the mad train plowed like a battering ram into the rear of the circus extra.

It was a mighty crash, a clap of sudden thunder that woke all in sleeping *Ivanhoe*. It also woke almost everybody in the circus train, but not all, for a few were crushed as they slept and never knew what happened. Close on the crash came the flames from the swinging lanterns in the cars. The heap of matchwood started to burn at once, while the dark was made more dreadful by the fearful noises of the beasts of the far corners of the earth that were here assembled on Indiana soil. Higher pitched than the roars of the animals were the cries that came from the telescoped and splintered sleeping cars. The girls of the ballet—*One Hundred Beauties*—were dying horribly and too slowly in the licking flames, many of them already mangled beyond knowing.

Pretty and dainty Rose Borland never cried. She was beyond crying and probably never roused. But Hercules the Strong Man roused. He could lift a ton, said his billing, but he was no match for Engine Number 8485 as operated by Alonzo Sargent, for Hercules crumpled like so much cardboard. He was crushed completely to pulp from the waist down, and when they found him his great arm muscles could barely twitch as he begged one of the rescuers to kill him. . . .

Joe Coyle, the famous clown, survived, though his wife and two babies died in the berth above him. Nor were they alone, for a dozen of the lovely ballet girls died where they lay sleeping. The Rooney Family of bareback riders was wiped out. So were the Famous Meyers, animal trainers;

the Cotterell Family, horsemen and horsewomen par excellence; and three old-time joeys, veteran clowns.

As the flames rose higher from the burning wood and flesh, dawn came to Indiana to find disaster and chaos spread on the tracks at Ivanhoe and in the fields. The grass and cinders were strewn with the gauds and tinsels of the world of the circus—spangles, shreds of tights and ballet dresses, tin crescents, stars, *fleurs-de-lis*, and the ridiculous great shoes and pantaloons of the clowns, funny no longer, but peculiarly tragic in their present situation.

Ivanhoe turned out to give such succor as it could. The tracks from Gary were cleared, and a hastily assembled special brought doctors and nurses. Another came loaded from Hammond. But no water was handy, and the great mass of debris burned on and on while brave men tried desperately and often futilely to save those who were trapped in the jumble. The survivors were put aboard a train and taken to Hammond, where many were hospitalized and the others filed past a gilt circus wagon set up in an open lot where Manager Dollmer checked the living against the names on the circus pay roll. Sixty-eight had died, one way or another, by being crushed, suffocated or burned. One hundred and twenty-seven others went to the hospital. There was no show that day in Hammond.

Five days later investigators met in Hammond to determine responsibility for the wreck. Conductor Johnson of the circus extra testified that his train was stopped to fix a hotbox when he saw the engine of the troop train coming headlong. He had seen his flagman, the trusty Trimm, give the washout, the emergency stop signal, by swinging a red lantern. Trimm himself took the stand to relate his story.

The chief witness, of course, was Engineer Alonzo K. Sargent of the troop train. He testified that he had little or no sleep for twenty-four hours prior to the wreck. He said he had eaten a couple of heavy meals before going on the fatal trip. He said the wind had been high that night,

and he had closed the cab window to make the place comfortable.

The questioning of Engineer Sargent continued. He said he had taken "some kidney pills" just before he started the run. Doctors testified that most, if not all, kidney pills contained a narcotic that "tended to produce unavoidable drowsiness." The investigation was at last getting somewhere.

Filled with the drug, Engineer Sargent, a railroad man of long experience, had put his hand on the throttle to pull out of Michigan City and had kept it there. He admitted he had then dozed and been dozing when he ran past the caution signal. He was still dozing when he passed the automatic red signal. He had never seen Flagman Trimm with his waving lantern. Even the thrown fusee had failed to wake him. The first warning of danger he got, he vowed, was when he saw the tail lights of the stalled circus train.

Meanwhile, Sargent's fireman, a new employee, had either not seen the automatic signals or had not recognized their import. He had continued to shovel coal, as a good fireman should, and kept the steam well up in the gauge, while Engineer Sargent, his kidneys at last eased by the soothing effect of drugs, had slumbered long enough to perpetrate the greatest circus train disaster in the annals of the three-ring sawdust world.

The Flu Epidemic of 1918

By Frederick Lewis Allen

As every newspaperman, publicity man, and politician knows, a big news event is sometimes thrust out of public notice by a still bigger—or more exciting—event which happens at the same time. If he wants his story to land on the front page, he prays that there will be no grave threat of war, no great disaster, no juicy murder to compete with it for public attention. There is relativity in news. When, for example, a *Hindenburg* disaster [see *The Last Flight of the Hindenburg*, page 258] takes place, even a struggle between the President and Congress over the Supreme Court sinks for a time into comparative insignificance in newspaper readers' minds.

Now and then the same sort of thing happens in the larger field of history. An event of great historical importance is crowded off the front pages and out of people's memories by other simultaneous happenings. Could one find a better example than the fact that the most terrific epidemic which ever visited the United States—the epidemic which brought death to a half-million Americans—never became the big news event of its day, was only sparingly written about, and was soon half-forgotten?

Readers who were grown up in 1918 will recall the great influenza epidemic of 1918 more or less vaguely, as a sudden scourge of a particularly virulent form of grippé (known at the time as Spanish influenza) which swept the country during the last two months of World War I—those

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months of late September, October and early November, when the Allied troops were victoriously thrusting the Germans back across the ruined countryside of France and Belgium, when the central European empires were crumbling, when Woodrow Wilson was laying down the inexorable terms of armistice to a frantic German Chancellor, when the Fourth Liberty Loan campaign was arousing a new frenzy of war enthusiasm, and when the American public was wondering if the fighting would soon be over.

These readers will remember how friends and members of their families and fellow office workers were taken ill, how the influenza often turned to pneumonia, how doctors and nurses were overworked (if obtainable at all), how people went about with white cotton masks over their faces. Some readers will remember going home with a high fever and aching bones and a cough, and being warned to stay in bed lest pneumonia develop—as it often did. Ex-soldiers may recall that their regiments at the training camp or at Brest or in the trenches were depleted by sudden illness. But even these older readers will perhaps be surprised at how widespread and destructive the plague was.

The epidemic took at least a half-million American lives—ten times as many as the Germans took during the war. In the Army camps in the United States, every fourth man came down with influenza, every twenty-fourth man got pneumonia, and every sixty-seventh man died from the combined effects of the two diseases.

Nor was this an American epidemic only. It was world-wide. In India it killed some 5,000,000 people. It spread simultaneously to the remotest regions—Africa, upper Labrador, the Philippines, the South Seas. In Alaska whole villages of Eskimos lost their entire adult population; in Western Samoa the epidemic took, directly or indirectly, 7,000 lives out of a population of 30,000; in Fiji some 85 or 90 per cent of the population of Suva fell ill. Although the total loss of life the world over cannot possibly be

computed, certainly it was much larger, in a few months, than the total loss of life in the many years of fighting in World War I.

According to no less sober and cautious an authority than the British Ministry of Health, the epidemic ranks "not lower than third, and perhaps second, upon the roll of great pestilences" of all recorded history. "No epidemic of smallpox or cholera," says a report issued by this Ministry in 1920, "not even the typhus periods of the earlier years of the 19th century, can vie with the influenza epidemic of 1918-19 as agents of destruction." The only two rivals in history, it seems, are the plague of Justinian's reign and the 14th-century Black Death.

Yet so completely did the end of the war displace this great plague in popular attention and destroy the memory of it that you will find only the most fleeting mention of it—if at all—in the history books.

Since there was a war going on at the time and hysteria ran high, it was natural that many credulous Americans should have imagined that influenza germs had been brought to America by German agents. One gentleman, Lieutenant Colonel Philip S. Doane of the Shipping Board, suggested an even more definite possibility. "We know," he was quoted as saying, "that men have been ashore from German submarine boats, for they have been seen in New York and other places. It would be quite easy for one of these German agents to turn loose Spanish influenza germs in a theater or some other place where large numbers of people are assembled. The Germans have started epidemics in Europe, and there is no reason why they should be particularly gentle with America." Unfortunately for this delightful theory, careful postwar research shows that one of the places where the epidemic was first reported in the whole world was Camp Funston, in Kansas.

Did the epidemic actually start in Kansas? To ask that question is to find oneself confronting one of the riddles of medicine. As everybody knows, there are periodic waves

of diseases or groups of diseases variously known as influenza or grippe. Sometimes these waves are big, and the disease is frighteningly severe; it was very widespread and very bad, for example, in 1889-90, and pretty bad in 1928. Sometimes it is comparatively mild. The epidemic of 1918 began in a rather mild form in the spring of the year. It was recorded at Camp Funston on March 5, spread quickly through the camp, passed off. On March 18 it hit the Oglethorpe camps. In the same month the same disease—or what looked like it—appeared in such widely separated places as China, the Japanese navy, and the French village of Chaumont.

That is a strange set of facts to build a theory upon. They suggest that possibly the influenza broke out in no one place, but in several places simultaneously. What followed was even stranger.

By April the disease had reached the American troops at Brest, apparently having been carried there from American Army camps. It had broken out also among the British troops, and among the German troops on the Western front. In May it was reported not only from France but from Spain, Scotland, Greece, Macedonia, Egypt and the Italian Navy. By June it had taken hold in Germany, Austria, Norway and India. It was running wildly through Europe, and no wonder, for most of Europe was fighting, and troop trains and ships were constantly transporting men hither and yon in quantity. Spain had a hard time of it before the end of May; hence the label "Spanish influenza." And as it spread it increased in virulence. During those summer weeks of 1918, when Ludendorff's final thrusts into French territory were being turned back at Château Thierry and Compiègne and Hazebrouck, and Foch was beginning the counterattack which never stopped for long until the war was over, few Americans heard much about the influenza epidemic, but it was moving fast and taking an increasing toll abroad.

Then it moved *westward* again—back across the At-

lantic. And all at once it was no longer a mild disease either in the United States or in the other countries ; over the world. Now it was terrifying.

Toward the end of August, some fifty cases suddenly appeared among the men at the Naval Station at Commonwealth Pier, Boston. Within a week there were 2,000 men down with influenza in the naval forces of the First Naval District, centering in Boston. Sailors often mingled with soldiers: on September 7 or 8 influenza had broken out at Camp Devens near Boston. The scourge was beginning its real American onslaught.

In each camp the first few cases appeared to be mild but presently one case in six or seven turned into pneumonia; and this took so severe a form that a pneumonia patient had only two chances in three of pulling through. The disease spread from the military through the civilian population, doing its greatest damage among young men and women. It leaped from one end of the country to the other. By the first of October the epidemic had reached its peak in Boston (and simultaneously in Bombay, India); by the middle of October it had reached its peak in Philadelphia and Baltimore (and also, for variety, in Liverpool and Vienna); during the next week, from the 19th to the 26th of October, it came to its climax in New York (as well as in Berlin, Paris and Stockholm). Another week, and Cleveland was seeing the worst of it (along with London); still another, and Pittsburgh, Spokane, Edinburgh and Amsterdam were having their crises. Meanwhile, influenza and pneumonia were running through all the other American cities, through the Army camps in America, and through the troops in a half-dozen theaters of war.

To meet the crisis, Congress made a special appropriation of \$1,000,000 for the Public Health Service, and the Red Cross appropriated \$575,000. Though nobody knew just how the disease was communicated, the coming together of people seemed to have something to do with it.

and therefore football games and boxing matches were canceled, the Kentucky races were called off, and theaters and other places of amusement were closed, stranding thousands of actors on the road. All releases of motion pictures were canceled until the epidemic should abate.

In Boston and Washington the public schools were closed. The New York Public Library discontinued the circulation of books. The New York Telephone Company, with no less than 1,600 of its operators ill, asked its subscribers not to use the telephone except for the most urgent calls. Dr. Royal S. Copeland, then Health Commissioner of New York City, asked businesses to stagger their hours of opening and closing so as to relieve congestion in the subway and other transit lines. A political campaign was under way, but political meetings were few. In Seattle and many other cities, every place of public assembly was closed. Even war plans were delayed: the Provost Marshal General canceled orders for the entrainment of 142,000 draft registrants because conditions in the training camps were appalling.

Meanwhile the health authorities lectured their frightened communities on hygiene—and thus provided a little comic relief from the stress of illness and worry, as when Dr. Copeland warned New Yorkers not to kiss except through a handkerchief and, taking his cue from the custom of observing heatless days and motorless Sundays to save fuel for war purposes, called for "spitless Sundays." Five hundred New Yorkers were arrested for spitting. The New York Medical Society warned against handshaking.

In Washington and elsewhere one saw people wearing strange-looking white cotton masks in offices and shops. Barbers generally put on masks, but even so they were regarded with such suspicion that the sale of safety razors boomed. Nor was ingenuity asleep: in *Popular Science Monthly*, Edward T. Duncan suggested that you could smoke a cigarette through a mask if you put two corn-plasters on the mask, one inside and one outside, and cut

a hole through the mask to fit the holes in the plasters. The holes would be corked when not in use.

Yet all precautions seemed useless. So savage was the attack of the epidemic that mines and factories and shipyards were crippled by sick leaves. More than half the population of San Antonio, Texas, fell ill. In other cities one person in three or four was laid up. The death rate in Camp Sherman approached those of the plague in London in 1665 and of yellow fever in Philadelphia in 1793.

Doctors and nurses everywhere were overwhelmed. A physician would answer a call and instead of treating one patient would have to treat ten or fifteen—members of the family and neighbors—before he could leave. Hospital conditions were a nightmare: wards designed for thirty people were jammed with seventy, half of them dying; when the day nurses came on duty they would find many new faces in the beds—replacements for those who had died in the night. Doctors and nurses were falling ill themselves, some to die in three days. Panic was everywhere. A nurse who had had but two months of training was offered \$100 by telephone to come and look after a man and his wife who were both ill. Dr. Copeland appealed to every woman in New York with any knowledge of nursing to volunteer for immediate service; and in Philadelphia, which was harder hit than any other big city, the Council of Defense advertised for help from “any person with two hands and a willingness to work.”

It had to be willingness to face grim scenes, too: one nurse in Philadelphia found a house in which a lone woman had been dead and unburied for a week; another found a husband dead in the same room where his wife was lying with newborn twin babies: life and death had come to that house together. Cemeteries appealed for more gravediggers. In several cities there was a serious shortage of coffins; in Philadelphia the J. G. Brill Company, manufacturers of streetcars, turned its woodworking shop over to

coffin-making as the bodies piled up in the morgue. Mid-October was a grim time in hundreds of communities.

The disease was no respecter of persons. Among the millions of Americans who came down with it was the Assistant Secretary of the Navy, a young man named Franklin D. Roosevelt; arriving at New York from a two months' visit to Europe, he was taken to his mother's house in an ambulance.

The most important sufferer from the influenza—and unhappily, perhaps, for the theory that the enemy had arranged the whole thing—was not an American, but the German Chancellor. On October 23, when Germany's Bulgarian allies had already surrendered, when her Turkish allies were on the verge of surrender, and her Austrian allies were likewise pressing for peace negotiations; when it was already clear that Germany was menaced not only by Foch's advancing armies but also by disaffection at home; and when the new German Chancellor, Prince Max of Baden, was already appealing to Woodrow Wilson for peace and was being told categorically that if Germany wanted peace she must overthrow the Kaiser—at this critical juncture Prince Max came down with the flu. Before he could resume any sort of work German sailors had mutinied at Kiel and events were rushing headlong toward their mighty conclusion.

In America the influenza struck furiously—but briefly. The graphs which show death rates in most American cities week by week during October, 1918, look like cross sections of a city with one skyscraper towering high above everything else. A few cases one week, a few more the next; then a terrific increase with a vast number of deaths; then, during the next two weeks, a rapid subsidence toward normal.

With the rapid subsidence of the epidemic came a rapid recovery of morale. And no wonder; for by the beginning of November it was clear even to the most skeptical Amer-

ican mind not only that the influenza was on the way out, but also that the war was ending—and ending in a victory bewilderingly sudden and complete.

Once the influenza was clearly on the wane it was well-nigh forgotten—except in those families where someone had been taken. To the mass of Americans, what was a passing epidemic when the headlines were daily blaring forth the unbelievable news—the American and Allied troops routing a demoralized enemy, Austria accepting an armistice, mutiny and rebellion spreading in Germany? Minor upsurges of influenza were to come that winter and the next spring, but in most places the disease was to take a milder form than it had during October—and who cared now anyhow?

On November 7 came the false news that an armistice had been signed, and America poured out of its shops and offices and homes, singing and shouting and blowing tin horns, while ticker tape showered down out of the windows.

On November 11 came the real news, and there was a mad celebration all over again. Influenza? Masks? Keeping away from crowds? All that seemed a remote and unimportant nightmare now to cheering multitudes in the streets.

Only one thing mattered. The war was over!

The Great Wall Street Explosion

By Alan Hynd

NEW YORK, N.Y., September 16, 1920—The hour of noon had just been tolled by the bells of New York City's Trinity Church on Thursday, September 16, 1920, when a weatherbeaten wagon standing in front of the United States Assay Office, on Wall Street, exploded with a roar heard for ten miles. In the next few minutes the neighborhood was obscured by thick smoke. When the pall lifted, there were 29 dead and more than 100 critically injured—four fatally.

Not a window for blocks around remained unbroken. Façades of buildings were scarred, as if from bomb fragments. The only object in range of the explosion which escaped unscathed was the statue of George Washington on the steps of the Sub-Treasury.

While infantry troops with fixed bayonets rushed in to guard the Assay Office (repository of \$900,000,000 in gold bullion) and the Sub-Treasury, in the fear that the explosion might be a prelude to robbery, more than 100 detectives moved methodically through the area. Dwight W. Morrow, a Morgan partner, told the sleuths that he had noticed a decrepit delivery wagon, drawn by a sagging bay horse, standing in front of the Assay Office shortly before noon.

Any doubt that the explosion had been incendiary was dispelled when detectives noticed some of the dead had been struck by forcefully propelled pieces of junk metal.

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Such junk must have come from an infernal device in the wagon.

Hoping to find a clue to the origin of the contrivance, the police department ordered the street-cleaning department to deliver all debris found within several blocks of the Assay Office. The magnitude of the task was typified by the fact that a piece of sash weight—obviously from a lethal contraption—was found atop the forty-story Equitable Building.

The wagon in which the explosion originated had been blown to bits, but fragments of it were found more than a block away. The carcass of the horse was virtually intact, and an autopsy disclosed it had recently eaten a large quantity of fresh grass. Apparently it had been stabled outside the city, where there were pastures.

The animal's front shoes were old and well worn, and blacksmiths believed they had been made in non-union shops. The hind shoes, however, were new, and bore the trade-mark of the National Horseshoers Association.

By nightfall detectives had begun a canvass of blacksmith shops throughout New York City and neighboring areas, including northern New Jersey, in a search for the man who had shod the horse hitched to the death wagon. A blacksmith, they knew, often imparts to his work distinctive characteristics which he can later recognize.

Mayor John F. Hylan, popularly known as Red Mike, appealed to all citizens for any information that could be of value in running down the perpetrators of the crime.

The mayor's appeal brought forth a pedestrian who had been walking west on Wall Street, toward Broad, at about seven minutes before noon. He had drawn abreast of the wagon just as it had come to a stop. The driver—a small, dark man of uncertain age—had alighted and, before hurrying away, had said to the pedestrian, "You better get out of here *quick!*" The man had thought little about the warning until he heard the terrific detonation.

The informant was taken to a motion-picture projection

room to view Pathe News scenes of the blast vicinity which were made just after the explosion. They clearly showed the faces of hundreds of the morbidly curious. The police theorized that the driver of the wagon might have returned to the scene of his crime.

As the driver wasn't in evidence in the films, the police did the next best thing: they had an artist draw a picture of the man, based on the pedestrian's description. Thousands of facsimiles were sent to police departments all over the nation.

Some ten tons of debris, taken to police headquarters, were painstakingly examined. Among the clues worth following were pieces of tin smelling of gasoline. The American Can Company sent experts to examine the tin. They concluded that, among other explosives in the wagon, there had been two five-gallon cans of gasoline. A further analysis of the tin fragments established the fact that the cans had been made by the Atlas Can Company of Brooklyn—but that concern had made so many five-gallon containers that tracing them was impossible.

The clue of the horse's hind shoes led to a blacksmith shop operated by two Italians on Elizabeth Street in Manhattan's lower East Side. The smithies identified the shoes as those they had put on a bay mare the day before the explosion. The horse had been drawing a one-ton, single-top delivery wagon which answered the description of the vehicle that Dwight Morrow and others had seen standing in front of the Assay Office. The blacksmiths promptly identified the artist's drawing on the police flier as that of the man who had had the horse shod. Unfortunately they had no idea who he was.

As time wore on, the wagon itself was reconstructed from fragments of its wheels, tailboard, framework and metal parts. The condition of the parts indicated that the vehicle had been at least fifteen years old, which made tracing its ownership a remote possibility. But there was a clue in the reconstructed wagon. The width between its

wheels was four inches greater than the width between trolley tracks in New York City. Since most wagons in Manhattan were built so that their wheels could utilize the trolley tracks, it seemed the vehicle had probably been used outside the city. This corroborated the clue of the fresh grass in the horse's stomach.

The harness of the horse was eventually traced to its manufacture in Kingston, New York, over a decade previously. Time was again operating against the man-hunters.

Government investigators had now entered the case. Detectives of the New York police department investigated settlements as far distant as the Pennsylvania anthracite fields, particularly localities where sash weights of the type that had been part of the infernal machine were used in homes.

J. P. Morgan, who was in Scotland the day Wall Street ran red with death, couldn't shake off the feeling that the plot had been directed against him, so he put private detectives on the case. The plain-clothes sleuths produced a tip that sent them scurrying to Poland on the trail of a man who had left New York for Warsaw just after the explosion. When found, the man had an airtight alibi.

Another lead was the small knob of a safe, which had been part of the infernal device and had struck a street cleaner a block away from the Assay Office. Safe manufacturers were circularized and the knob was identified as the product of a company in Cincinnati.

Sales records disclosed that a safe of the same serial number as that shown on the knob had been sold years previously to the United States Army. Army records showed the safe had been sent to a barracks at Jeffersonville, Indiana. An officer who had been attached to the Jeffersonville barracks at the time the safe was sent there was now living in Omaha, Nebraska. This officer recalled that the safe had been transferred from Jeffersonville to New Orleans.

From New Orleans the trail led to War Department

archives in Washington, D. C., and disclosed that the safe had gone to France with an A.E.F. company in the first World War. The sleuth traced the company through the war and back to its point of disembarkation in Hoboken, New Jersey. There the adventurous record of the safe came to an end.

For years after the crime, suspects were picked up regularly, then exonerated. Detectives followed leads to the ends of the earth. Today, more than a quarter of a century later, New York's biggest murder mystery still remains unsolved.

Mississippi Rampage

By Harnett T. Kane

NEW ORLEANS, LA., 1922-27—The Mississippi was "high, high"; men gazed at their levees and wondered. Outside New Orleans the whirling yellow tide, heavy with the springtime scourings of the continent, reached nearer to the top than at any time in the memory of the elders. In St. Bernard parish the residents had been giving special attention to their high, green-clad embankments. On April 27, 1922, officials completed a tour of inspection; they met no signs of weakness, no disturbing trickles at the landward bases. Delta people went to bed that pleasant spring evening without anything unusual to concern them.

Shortly before three o'clock the next morning, a member of the levee patrol passed near the old Poydras plantation, about fifteen miles below the city on the east shore. The night was clear; the restless water gurgled close to his horse's hoofs, but no closer than it had come for a day or so. Another long watch was nearly over. *Bien*. Fifteen minutes later a truck farmer drove by the spot with a wagon-load of vegetables for French Market. He heard a deep rumble, like far thunder on the Gulf. But it seemed somehow close at hand. His eye caught a movement of some kind; in a moment the earth of the levee "seemed kind of pushing out, toward me." Great handfuls of soil shot upward. Out of the mound poured thick mud and grass, and a spout of water. He spurred on his horse; already the

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earth about them was covered by a thin stream. The rumble became a roar; looking back he could make out a kind of waterfall over what had been the slope of the bank.

Men raced from their houses. Levee going, fast! Some did not require notice. One resident, who lived nearly a quarter-mile away, was wakened by an unaccustomed noise; when he reached his gate, water was in front of the house. Crowds hurried to the scene, then drew back as the earth on each side of the crevasse cracked before them. The water was moving in a deeper, more threatening flow with every few minutes; now it was a violent torrent that meant death to anyone who approached too close.

By dawn workers with trucks, wooden pilings, and heavy sandbags were at the break. Engineers made a quick inspection, then shook their heads. The river made a bend near by, and the flow rushed upon the crevasse with a plunging force accumulated in a straight sweep of several miles. The breach could not be closed; all that they might do was to "tie" the ends in an effort to keep it from widening. The new current moved eastward toward the Gulf; a belt several miles wide was soon to be covered—some of the best truck-gardening land in the South.

Hundreds were looking toward the river in dismay. In the distance they heard the water on its way; within a few hours the land was darkening before them, as a line of wetness crept in their direction. About their yards the chickens were flapping, jumping up the steps or whatever higher roosts they could find. Dogs scratched at doors, horses and cows shifted about in alarm. Over the fields the moisture trickled between the pale green rows of lettuce and cabbage. Farmers ran about frantically, pulling up the vegetables, tossing them into baskets. They were in a losing race with the Mississippi. As they worked, the lower leaves began to disappear, then the whole heads. Before many of them could reach the end of the first line, all was under water.

One farmer had been planning for a week to harvest his

produce. Each day he had looked at it, growing bigger in the balmy, dew-covered morning, and had decided to wait a little longer. Now the river swallowed his livelihood. In the house were seventy-five cents and a few pounds of flour, for eight people. What was to be done? He gazed down again at the water, and knew the answer. Already it was up to the doors and a trickle reached into the kitchen. An official approached in a boat. They were right in the path; they had better go, *certainement*.

With trembling hands the family gathered its things—bedding, clothes, food, the picture that Grandpère had left; then they realized that they could never take it all. The big skiff was drawn from under the house. Maman was crying now, the bitter tears of a woman who must leave her home. Her aged mother sat in the corner, saying her beads, talking between prayers about other, earlier occasions that had not been entirely different. The children drew up about their mother, frightened by her weeping.

Papa announced that as soon as he had put them all in a safe place, he would come back to guard the house. Maman cried harder at this. *Non, non*, he would die. The building would fall, or he would catch a disease in this terrible wetness. Well, they would see. Papa tried to comfort her; the boat was ready now. *Eh bien*, it might be worse, maybe!

Setting forth gingerly, he rowed to the front gate, carefully opened it, rowed through and told the boy in the stern to close it tightly. Then he advanced up what he judged to be the road. As the family drew away, they could hear noises within the house. The water was beginning to move their belongings about, knocking them over. It was a sound that made Maman shudder.

First they must get to the levee, always the highest place. On it, some distance from the break, they would be safe until someone came. Maman whispered that maybe if they jus' stay' there a couple of days, the flood would go down.

But when she and the others listened to the pound of the water through the opening many yards off, they knew this to be a futile hope.

Emergency shelters were being set up along the upper borders of the parish. Motorboats, luggers, and barges moved out to pick up the people. Many had to wait long hours, a damp day and night, before help came. Whenever a boat approached, the men waved their arms and called for help. Often they were told to be patient. A message had arrived that groups of families were marooned to the back; or there was a sick man, with his family, alone in a threatened home; the boat would be back. The flood was rising. Near Lake Borgne eighty people huddled in a few shacks; scores had crowded into several of the canning factories, seating themselves first on benches and then on tables as the waters lifted.

The spreading waves now approached the Gulf, moving across ponds and bayous, overwhelming canals and their bridges. They added a paler coloration to the green-black liquids of the swamps, then swept over the marshes and into the blue salt currents. As they went they brought ruin, at least temporarily, to hunting and trapping grounds and to oyster beds. The fishermen toward the lakes were accustomed to frequent intrusions of salt from the sea. But this silt-burdened stream was worse than any that they had known.

Owners of small properties sometimes gathered with their neighbors and tried to build levees in a ring about them. After twenty-four hours or so, the river casually washed it all away. A baker, turning out thousands of loaves for the flood victims, kept his machinery running for several days, until suddenly the protection fell apart and a sheet of water broke in. At another point a factory force of hundreds labored at the borders of a man-made island in the yellow sea. No sandbags or other materials for building a levee were at hand; some were on the way, but meanwhile the men must struggle as best they could,

using shovels, scraping up the earth with buckets. Their energy was desperate; hour by hour they kept at it, halting only for brief intervals of rest on the ground.

The women stayed at the men's sides. The flood crept higher, an inch or two at a time. At dawn one morning they realized that hope was lessening rapidly. A section six feet long began to give way. All hands rushed to the weakened spot and saved it. Then the men scattered again, each to his section of the mud wall. "We prayed, over and over, for them to send fresh help," one worker sighed. "We knew it was promised, but when?" The water was edging to the top; here and there it slipped over in pale streamlets. Still they worked, panting, sweating, silent. Then down the river came the dim outlines of a relief boat—with supplies and eighty or more additional men.

But they were too late. The water was topping the levee at all points, and it was crumbling. "Make for your houses!" The men ran, and the river poured after them. Soon it was five feet high, and over everything. Those whose quarters had second stories fled to them; some were so exhausted that they fell helpless upon their beds while the women furiously packed what they could. Further orders came; they must go at once; the pent-up strength of the current was terrific. They left most of their belongings behind.

Meanwhile cattle faced danger up and down the river bank. Thousands headed to the main levees and a precarious refuge, while others moved ahead of the water toward the lakes and their doom. Some fell into hidden canals, to drown in their exhaustion. Men went out in barges to round up as many animals as they could; accidents multiplied; barges carrying men and cattle capsized with heavy losses. Vessels advancing toward the back areas were forced into the Gulf by the surge of the river waters. At the front, the break still grew. Already a third as wide as the Mississippi itself, it dug forty-five feet into the ground as its force struck immediately behind the levee. The crevasse

created a peril for ships in the river. Even in midstream, pilots felt a pull to the side, and smaller ships fought hard to prevent being sucked into the hole.

Up in New Orleans, people told each other that the crevasse at Poydras had been a godsend. The volume of water withdrawn from the stream rapidly lowered the level at the city. The Delta, whatever the feelings of its people, had rescued the metropolis. But those among the eddying waters could only say, as did one while he watched his house disappear, "This flood, she is the poor man's hell."

The date was now 1927, five short years later—the year that has been termed the grimmest in the history of the valley. Unprecedentedly heavy surges of water were rushing into the lower river. Upstream levees were breaking; thousands were fleeing their homes in districts that had never known serious flood. New Orleans was frightened, more frightened perhaps than at any previous time. Few Deltans appeared fearful on this occasion. Their upper levees had been rebuilt and strengthened; the banks would hold.

At the city, thousands of sandbags were stacked along the river. Engineers did not like what they saw. Hundreds labored in the sun; still the stream rose, and the crest was not yet in sight. Some recalled the way the levee down at Poydras had broken without warning in 1922. It might happen like that at New Orleans, any day, any night. Nursing units, first aid, and emergency police were organized; but the men and women on the streets asked for more than that. Ways *must* be found to save the city. Millions in wealth were endangered; a population of a half-million was alarmed.

A note of hysteria entered the voices of the people behind the levees. Confidential messages were conveyed by city officials to the Governor and to the United States engineers in general charge of the river protection. Reports spread by word of mouth. Yes, there was a way to protect New Orleans . . . The Deltans realized suddenly what the

city had in mind—the Delta; specifically, a crevasse to draw the water out of the Mississippi just as the last one had done, a man-made break below the city! It was the interests of a metropolis against those of the farmers and fishermen. Washington was even then being asked for permission.

The Deltans cried out in astonishment. It would be a shame, a crime in the sight of *le Bon Dieu*! Who did those people think they were that they could act like this to others? Let them watch their levee; we watch ours. *Oui*, they got fine house' and nice thing'. We got ours, too. Faces grew sullen, and eyes bitter. It was bad enough when it happened by itself; but for somebody to come along and make a levee go! The men talked of forming lines at the parish border and shooting it out with any who tried to get at their embankments.

The city's representatives worked hastily. The peak of the river was coming; they could not delay much longer. Emissaries went to the Delta. Look, everything would be arranged to lessen the blow. The city agreed to give full compensation for losses; merchants would put up the money. Central headquarters would be set up at the Army supply base below the city. The Deltans could even remove their furniture and it would be stored and ticketed with their names and addresses, *see*. The children would go to school; city ladies would cook meals for them. Stage shows every week, a daily newspaper for the family. Wasn't it all fair?

The Deltans listened and said *Non*. Would you give up your house and everything you got, mister, for somebody else? New Orleans knew about the trappers' fights; well, they would be picnics compared to what would happen now! Delta officials sent committees to New Orleans, telegrams to Washington. Couldn't something else be done, in God's name? They had just recovered from the last flood. Appeals failed. The water swirled higher by the day; the city's pressure grew.

Then Washington gave its approval. Soldiers assembled and a decision was reached to blast open the levee at Caernarvon, not far from the previous break. The Delta officials gave in. A farmer shrugged and nodded. Trappers and fishermen muttered, and walked slowly back to their homes. The Deltans gave way because it was all they could do. "We got pick between pay crevasse and crevasse without no pay. We better take pay."

The women thought of that day of the last levee break. When it had to be done so fast, and unexpectedly, it seemed easier. Now, though they could take everything, the weight on their hearts was greater. A few hurriedly dug up their vegetables for a quick run to the market. The remainder left behind their partly ripened crops; they would now feed only the river fish. Trucks and wagons called for their belongings, bearing bright banners on their sides: "Flood Relief." "What flood?" demanded unreconstructed Deltans.

An intense woman, wetting white lips with her tongue, talked as many others thought. Shutting her gate, she told the Army driver: "I don' think we'll ever come back. We been here so long. My own Mère was born here . . . We had to leave at the las' break, but when we got back I fix' it nice. We even put an inside bathtub. Now they say water might take the whole place. I guess you ain' never had somebody move you out like this?" The soldier said he was sorry. Her husband took her arm and led her away.

It was an exodus of men and animals, trucks piled with tables and vases, blankets, boxes, and chairs; rattling cars, people on horseback, on muleback, a few driving oxen before them, others with chickens in coops, or hogs and cattle. They left their animals at Jackson Barracks just below the city, and pressed on to the great building in which they would stay. If they wished, they could board with relatives; at the last minute some chose this rather than the life that would be so different from what they had known. The men and women carried their small bun-

dles, the children their pets. Well, here was where the party broke up. *Merci*, we keep in touch with that office like you say. We will get along, we guess. Now, Marie, you ain't crying again?

A few refused to go despite everything. Let the water drown them if it wanted. Toward the lakes a number of the bootlegging operators were reluctant. With everyone watching, it was impossible to move their commodities; none had any thought of deserting such valuables. In at least one instance, a rescue barge brought a large quantity, covered with fish. Most of the men stayed, with guns close at hand.

As the time for action on the levee arrived, the Army checked every vehicle entering or leaving the east side of the Delta, turning away thousands of the curious. New Orleans received high government officials, engineers and construction authorities, to observe a feat of extraordinary interest. On April 29 at midday a tense group watched. Negro workmen prepared the soil, sank dynamite into the holes, and connected the fuses. A roar, a small puff of smoke and dust, and only a thin stream or two. More dynamite, and another tiny flow. Again and again, and the Mississippi refused to break through as men ordained. Deltans made remarks in French, in Spanish, in Italian, in Slavic. One winked and snickered: "The river, she fool New Orlean'. She don't wan' run out, do she?"

A call went up to the city for more explosives, as America waited to receive the news. Eventually it worked; the opening broadened, and the current threw out the mud in several directions. The dull hum changed to a growl. Here came the Mississippi; let her roar! A Delta official spoke solemnly to all who listened: "You are witnessing the public execution of a parish."

In the city there was jubilation and there was thanksgiving; among the Deltans it was heartbreak. One of the truck farmers shook his head: "This was the twice that we rescue' New Orlean'." The damage spread downward

across the Plaquemines parish line; the flood was worse than the last, and its effect more than physical. As some predicted, they did not return. Compensation was provided, but it seemed to slip away before the families knew it. Certain ones profited; the average man, considering the disruptions and their aftermaths, came out the loser. Many who went back attempted farming again, but often they felt that their hearts were "not in it any more." They shifted to fishing, to shrimping at the Gulf fringes; or they took odd jobs or went on relief during the depression that struck shortly afterward. Welfare records contain repeatedly the words, "Tried truck gardening again, failed . . ." "Does not wish to make attempt a third time . . ."

An observant merchant, who lived in the Middle West during the drought and crop failures of the 1930s, says that he found among such Deltans the same dejection, the same conviction of helplessness, that had spread among his own people. One St. Bernard man asked me, when he finished a recital of those years, "*Eb*, whatcha gonna do?"

The S-4 Has Been Sunk!

By Mary Heaton Vorse

PROVINCETOWN, MASS., December 17, 1927—
On a December afternoon in 1927, a neighbor put his head in my door long enough to shout: "The S-4 has been sunk off Wood End!"

The news ran like fire through the town, and by nightfall there was no consciousness of anything else in Provincetown, Massachusetts, except the men under the water. That first night was a strange one. People all over town kept vigil with the men on the S-4. Lights burned through the night in houses along the street, and as some of the townsmen who had been out on guard passed by, they stopped in with a little more news.

"I've been over to Wood End, talking to Frank Simonds. He saw it all. The S-4 was making its trial trip and cruising between those two can buoys. By and by he saw the *Paulding* rounding Race Point light. Pretty soon Captain Gracie came into the observation tower and asked Frank if he'd seen the submarine lately. Then he swung the telescope around and saw a stream of spray from the periscope. He dropped the telescope and yelled: 'There's going to be a collision!'"

The holidays were near and rumrunners were busy, so the destroyer *Paulding* had come out of Boston looking for them. Frank Simonds at the telescope saw the *Paulding* swing to starboard, trying to reverse engines. As he watched, the submarine broke surface under the port bow

Excerpted from the book Time and the Town, published at \$3.00 by the Dial Press, New York, N. Y.; copyright 1942 by Mary Heaton Vorse.

of the *Paulling*. The destroyer's bow rose with a terrific crash and the stern of the submarine hove above the surface. The *Paulling* stopped and a boat was lowered, but the S-4 had gone down.

Captain Gracie launched the surfboat in just a few minutes. He dropped a grapnel and commenced sweeping the bottom, working back and forth over the spot where the S-4 had gone down. At last, after four hours, he struck with his grappling hook. At three in the morning the grapnel gave way and his boat went adrift.

The only salvage ship the Navy had in the Atlantic, the *Falcon*, was in New London, a part of her crew ashore on liberty. But the *Bushnell*, the submarine's mother ship, hurried from Portsmouth. When his grapnel gave way, Captain Gracie got better grappling equipment from the *Bushnell* and went back to work through the rising storm. He lowered his new grapnel in the freezing spray and darkness and began dragging under the searchlights of the Navy mine sweepers.

On the street the next morning, knots of people were talking in low tones. "Why ain't they done nothing? We'd save these men with our own hands." It was as if one had gone into a town in mourning. Wherever one went, people were crying.

All through the freezing night Captain Gracie dragged his grapnel back and forth. The divers from Newport had come down the Cape overland and at seven o'clock the salvage vessel *Falcon* got to Provincetown and stood by with the divers. There was no use going down until the S-4 had been located and the lines hooked over the vessel's side to guide the divers.

Not until 10:45 did Captain Gracie's grapnel catch again, and at 1:30—twenty-four hours after the S-4 had sunk—the first diver went over the side. There was a head sea but in the sea's depth there was no sound but the diver's weights against the steel hull. Through the silence a faint signal was heard from the torpedo room.

The diver went across the torn deck toward the sound. He banged on the cover of the hatch, and from inside came six raps—clear and distinct. Six men were alive in that torpedo room. The diver signaled the news, then went aft to the conning tower and signaled there. Only silence. He went to the steel hatch over the engine room and signaled again. Again silence.

Admiral Brumby, flag officer of the Control Force to which the S-4 belonged, had arrived on the *Falcon*. He consulted with the other officers as to what steps to take. They knew that six members were alive forward. The rest of the crew might be alive in the rear battery room. There were two emergency air lines, one leading to the ballast tanks and one to the crew compartments. Edward Ellsberg, the famous diver, later wrote in *Harper's Magazine*:

"To which of these two emergency connections should the next diver hook the air line? . . . Carefully the situation was discussed. That no sounds came from aft probably indicated, Brumby thought, not that the stern was flooded, but that so many men crowded in a small space aft were either unconscious or so weak from bad air they could not answer. If so, prompt lifting of the stern was all that would ever save those aft . . . The decision to blow ballasts first and try and float up the undamaged stern was concurred with by all present (but which turned out to be wrong because two compartments were flooded; in addition a ballast tank was ruptured) and was promptly put into execution."

This decision was a death warrant for the six men still alive. With a rising storm, a desperate attempt was made to connect a hose to the compartment air line to feed air to the torpedo room. The attempt of the divers to accomplish this from the *Falcon* is an epic story which has been overshadowed by the tragedy of the men entombed in the S-4. Mired to their waists in muck, entangled in broken wreck-

age, frozen in icy waters, one gallant attempt after another was made.

Chief Torpedoman Fred Michels, Chief Boatswain's Mates Carr and Thomas Eadie were later joined in their heroic efforts by Edward Ellsberg. To save the life of Michels, who had been brought up unconscious and frozen stiff, the *Falcon* left for Boston. Its reason for leaving was not understood in Provincetown, and the townspeople were openly cursing the Navy.

By now much time had been lost. The greatest wrecking concern in Boston offered its services to the Navy the day of the accident and sent its wrecking machinery over at once. The Navy's wrecking equipment was in New York, but it would have been against all precedent for the Navy to allow a private wrecking concern to raise the S-4. And because of bad weather it took the Navy equipment three days to reach Provincetown.

Now that it was known that men were alive down there, a fury against the Navy seized the town. The fishermen said they could raise the vessel themselves. As if by wireless, the messages sent by the *Falcon* and answered by the men on the submarine flew through the town.

The *Falcon* signaled, "Is there any gas?"

They answered, "No, but the air is bad. How long will you be now?"

"How many are there?"

"There are six. Please hurry."

The *Falcon* replied, "Compartment salvage air line is being hooked up now."

The air connection was never made. The divers could not go down. Because the weather was sunny and seemed calm enough for some salvage work, the town's fury rose higher and higher.

Meantime, weakening calls for help came from the men on the submarine. The town had become the center of the whole world. Vessels of every kind had arrived. Town Hall

had been made into headquarters for the press. Relatives of the men, too, had come to Provincetown. Admiral Brumby had forbidden small boats to go to the scene of the disaster. When he peremptorily sent back the father of one of the entombed boys, anger again swept through the town.

The days dragged on and nothing seemed done. The feeling ran so high that to lessen the tension one of the townsmen invited officers of the *Bushnell*, the *Falcon* and other vessels to meet with captains of local fishing vessels to explain the technical difficulties which prevented rescue. The officers explained that the bad weather had prevented any diving. When the fishermen got up to go, they were told: "Don't go so soon."

"We got to go fishing," they answered simply. The weather, they implied, might be too bad for the Navy, but not for fishermen.

They did not realize that the short, choppy sea would have banged the divers to death. Certainly it was a hard situation for the town to understand. The weather was good enough for small boats to go over the surface under which lay the S-4. Until they were forbidden, boys in rowboats offered to take out passengers. Little motorboats cruised freely. The wrecker belonging to the private company was anchored in Provincetown Harbor and the Navy wrecker hadn't arrived. Meanwhile the town was being aroused to frenzy by the messages still being tapped out.

"How is the weather?" they asked.

"Choppy."

Later on, "Is there any hope?"

The answer came, "There is hope. Everything possible is being done."

It seemed to Provincetown that *nothing* was being done. The Navy Department ordered a message sent to Lieutenant Fitch, "Your wife and mother are constantly praying for you."

All through the night they kept on tapping the message through the water, through the silent ship.

"Lieutenant Fitch, your wife and mother are constantly praying for you."

At last, early Tuesday morning, the last word came from the men on the S-4. "We understand."

But the town did not understand. They did not understand why the line to the S-4 was lost again or why the divers didn't connect any air hose to the torpedo room.

Later, on March 3, three months after she sank, the S-4, a tomb of thirty-four men, was brought to the surface. The tragedy could then be reconstructed.

First of all, it was established that the S-4 could have been saved only if the stern had been lifted immediately. The submarine went down bow first at a steep angle and struck the bottom hard. She leveled off at even keel and there lay waiting for the rescue which didn't come.

When finally she was raised, it was discovered that a strange, unforeseeable accident had caused the death of most of the men. When they leveled off, Lieutenant Fitch and his five torpedo men were forward. Lieutenant Commander Jones was in the control room. The majority of the crew were safe. They had possession of the control room and its machinery. Banks three and four were undamaged. When water suddenly came in and they tried to close the forward ventilation valves, the bulkhead valve would not close. What must have happened is this:

The sudden pressure of the sea caused the collapse of the ventilation duct in the battery room. Water rose on the floor. The captain's stateroom was just forward of the control bulkhead and the door was draped with a green baize curtain. Water flowing in floated up the curtain; the curtain got tangled with the valve body, and the valve disks could not close.

Men must have fought to close it as the sea streamed in, but they were beaten by a valve in which a harmless green

curtain had lodged. The flood of water from the entangled valve drove them into the engine room, forcing them out of the control room, with its compressed air and controls, where they could have remained alive. And there in this small black hole they poisoned each other and died long before help could reach them.

A green baize curtain and human error had killed them all!

Death in the Everglades

By Ralph Wallace

FLORIDA, September 16, 1928—As savage a hurricane as this continent has ever known swept over the Florida Everglades in 1928, and in a few hours at least 2,000 people lost their lives while a region the size of Delaware was utterly devastated. The barometer dropped to the lowest point ever recorded in America. Gales whipped to more than 100 miles an hour.

That September the Everglades had been booming as never before. In the heart of the 'Glades, the persistent overflows of Lake Okeechobee, which had made the 'Glades an oozing swampland, appeared to have been controlled by dikes and drainage canals. The district's biggest planting of winter vegetables had just begun. Tractors growled through the muck fields like terriers; in seed stores and supply houses, clerks labored half the night. Although still wild country, infested with water moccasins, alligators and wildcats, the region ranked with the world's best farming land. Rich crops, as many as three a season, seemed to spring up at the touch of a plow. Sales of produce to northern markets ran more than \$2,500,000 a year.

Yet for all its prosperity, the region lay fearfully vulnerable to storms. From Lake Okeechobee eastward to Palm Beach the land stretches flat as a floor—a made-to-order arena for wild winds and floods. Jammed in shacks and tents on that lowland lived some 5,000 itinerant field laborers. Few could be reached by telephone; not one fam-

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ily in a hundred owned a radio. Okeechobee, thirty miles in diameter, lay above the level of most of the farms, but new levees circled the lake. Unfortunately the levees, built of muck and mari, were about as durable as porridge, and rose only a few feet above the lake's high-water mark. There had been a warning; in the 1926 hurricane the levees had broken near Moore Haven and 400 had drowned.

Still, nobody worried.

During August and early September, 1928, three feet of rain fell on the lake and on the 'Glades. The half-dozen canals from Okeechobee ran bank-full. The lake waters crept closer and closer to the crest of the levees. Let a high wind rise, and the levees would go. Meanwhile, 3,500 miles away, near the coast of Africa, a storm was lazily gathering momentum.

The first hint of this tempest came from the American freighter *S.S. Commack*, lunging through massive swells off Barbados on the morning of September 10. The worried captain noted that the barometer had fallen sharply and flashed a report.

On Wednesday, September 12, the storm screamed into the island of Guadeloupe. When it turned out to sea, 660 were dead.

By now the hurricane had become a giant 235 miles in diameter, with gales whose ferocity appalled observers. It hit Puerto Rico on Thursday morning. By evening more than 200,000 people were homeless; uncounted hundreds had died.

The storm now developed an elephantine capriciousness. For the next two days—Friday and Saturday—it seemed the great wind funnel intended to pass east of the Bahamas. Up to Saturday, the Weather Bureau, watching the storm's path curve eastward, was predicting that the hurricane would not hit Florida at all. Not until noon Sunday did the people of the Everglades learn that the storm had suddenly veered toward them.

There were only a few hours to prepare. In the little

farming communities bordering Lake Okeechobee to the south and east, couriers quickly organized to spread the alarm. Businessmen of South Bay drove about the countryside, collected 211 men, women and children, and placed them on a big barge in the lake for safety. Dr. William J. Buck of Belle Glade dispatched trucks to outlying sections to round up everyone who could be induced to leave home. Many stubbornly refused. But by late afternoon 500 people had been crammed into the two-story Glades Hotel and 150 more into the Belle Glade Hotel, across the road.

In mid-afternoon, the wind began to blow steadily out of the north. By 6:00 P.M. it was a howling gale. The huddled groups in the two hotels watched in awe as the wind tipped over automobiles and rolled them down the street. A huge roof sailed by at tree-top height; a farm wagon rose, its wheels gently turning, and disappeared skyward. Only the loudest shout could be heard above the hollow, drumlike tolling of the wind. Hysterical women, shrieking prayers, could not be heard at all. Then, at the storm's height, came a deluge of rain that drove horizontally in bullet-like fusillades.

On Okeechobee the gale pushed thousands of tons of water relentlessly before it. At the north end the lake literally blew from its bottom. Roaring crests, high as two-story buildings, scudded southward to rip and chew at the levees. Along twenty-one miles of the southeastern shore, waves suddenly topped the dikes. They crumbled, and out swept an avalanche of water ten feet high, rumbling hoarsely above the wind.

Within a few minutes the flood raged over Belle Glade, its crest toothed with telephone poles, uprooted trees, whole buildings. The Belle Glade Hotel was smashed from its foundations—then it grounded and held. In the Glades Hotel, Dr. Buck and other men moved women and children to the second floor. Men were placed on the stairs according to height; the water crept to within a foot and a

half of the first-floor ceiling. Outside, houses slid past with survivors raising imploring arms; bodies eddied in the hotel's doorway, then disappeared. Of Belle Glade's fifty homes and business buildings, only the two hotels and a warehouse survived. Almost all of the inhabitants who had failed to seek refuge in the hotels met death.

In the town of Pelican Bay, not one building was strong enough to withstand the hurricane. Half the town's 450 people stuck in their homes; the rest started on foot to Belle Glade. Flood and wind struck both groups, and every soul perished.

Elsewhere the tragic pattern was repeated. In their home on Ritta Island in Lake Okeechobee, C. E. Thomas and his wife and six children had no warning of the storm until the wind began to whip up huge combers. No boat could live to reach the mainland. Soon water began to bubble up through the floor boards. Hysterically, the family scrambled onto furniture, then up to the attic as ceiling-high waves raced through the living-room. The father chopped a hole in the roof with an ax, climbed out, and turned to hoist up the first child.

"Spray coming over the ridge pole half-blinded me," he said later, "and the wind tried to pry under my body and lift me clear. Just as I reached down through the hole in the roof I saw the butt end of an immense tree coming toward the house, and a split second later it struck."

The tree smashed through the building. Thomas rode free on a section of roof, as the house and his family disappeared in a welter of water. The next day, battered and half-conscious, he was rescued by a boat. The bodies of his wife and children were ultimately found miles away.

As the night wore on, horror piled on horror. On every hummock, fear-crazed poisonous snakes struck and writhed among the survivors. Dennis Flynn, a Pahokee farmer, sought refuge in a tree after his house blew away. All night he had to battle snakes which sought the same refuge. One father, who had fled with his little boy to high ground,

held the child out of reach of the snakes until, bitten repeatedly, he fell unconscious; in a few minutes both boy and father had perished.

Toward midnight the wind and wild waters rose to a crescendo; it seemed nothing living could escape. On Torrey Island in the lake, twenty-one persons clambered to the ceiling timbers of a packing house as the flood stemmed in. The building disintegrated under grinding waves and nine of the twenty-one died.

The wind blew on and on. All lights had gone long since; over the churning, rain-pocked waves was nothing but the whistling gale and terror.

The night held epics of courage. One of the most heart-warming was the story of twelve-year-old Thelma Martin. When the flood burst the Martins' flimsy bungalow apart, Thelma seized her two-year-old brother Aaron and her seven-year-old sister Ernestine and fought her way to a floating log. The log boomed off in the darkness; finally the little group lodged against a banyan tree. Pinned beneath debris throughout the night, Thelma saved Aaron from drowning by holding him up against the tree with her one free hand. When morning and rescue came, Thelma's legs were so battered that she could not walk. At the hospital, she learned that her mother had been drowned and her thirteen-year-old brother killed by a flying timber.

Miraculously, some families survived the wind and flood in safety. J. R. Reese, his wife and eight children rode out the wild night in the attic of their home as it floated for hours in the torrent. When the house finally grounded, the family tore a hole in the roof and peered out. They had come to rest on the edge of a canal, only five feet from a millrace of water crashing by at express-train speed.

Soon after midnight the wind slackened and died. At dawn the survivors peered out at the continuing rain as the flood still rose. Bodies were lodged at grotesque angles on every mud bank; nudging against them were carcasses of horses, cattle and hogs. From Lake Okeechobee to Palm

Beach—a distance of forty-five miles—scarcely a human habitation remained standing.

Rescue crews who pushed into the flooded 'Glades by boat looked upon scenes that suggested the end of the world. Muck-blackened waters nine feet deep covered much of the region. Only hulks of shattered houses remained.

The crews tied floating bodies together and towed them to concentration points. Occasionally, as the rafts of the dead passed the canal banks, a frantically searching survivor would recognize a husband, wife or child by familiar clothing. The raft would be eased into the bank for a moment until identification was complete. Then the corpses, revolving slowly in the propeller wash, would glide on.

For years afterward, Everglades farmers plowed up bodies in their fields. Many corpses had been buried forever in mud banks or beneath tons of debris. Because so many of the victims were itinerant workers, no census of the missing was possible. Residents estimated that 2,500 had perished.

Under the glaring September sun, bodies began to decompose. The stench poisoned the air and the specter of disease spread. In West Palm Beach the roar of steam shovels digging burial trenches for the 'Glades' dead could be heard throughout the night. Nearly 700 lay in one such grave. By the fourth day, bodies could no longer be identified; they were simply dumped wherever a high spot of ground could be found, saturated with oil and set afire. Crazy and sleepless survivors, still seeking missing relatives, had to be forced from these funeral pyres by brute force.

Radio and newspapers dramatized the catastrophe to the nation. A special train carrying supplies came from Miami; shows in New York set aside the proceeds of performances for the sufferers; the American Legion raised \$87,000 to help ruined 'Glades dwellers buy seeds, fertilizer and tools.

But even the terror of that devastating storm failed to crush the people's spirits. They had only one question: when could they go home again?

Today they are home, and the 'Glades are roaring with prosperity. In 1943 the War Food Administration awarded the region's farmers its "A" flag for their achievements in raising desperately needed food. The following year vegetable sales alone totaled \$20,000,000.

Although another hurricane can always strike, authorities believe that Lake Okeechobee is barred forever from rampaging over the farms. A great dike has been built, eighty-five miles long and twenty feet above the normal level of the lake. The land—acre for acre the richest in the nation—is safe from a repetition of the terror and tragedy of the terrible hurricane of '28.

Ohio's Prison Horror

By Charles Suters

COLUMBUS, OHIO, April 21, 1930—In 1929, the annual handbook of the National Society of Penal Information singled out the Ohio State Penitentiary at Columbus, one of the largest in the country, as also being one of the most overcrowded. "The need of another institution in the Ohio penal system," the handbook said, "has been apparent for many years, but the state is only now taking steps to alleviate the conditions. . . . Not only can Columbus not care for an increased population, but it is already too large a prison to be operated on any other lines than those of blanket treatment. Even with the completion of the present building program, it will be able to care for its present population only under conditions that fall far below accepted standards for housing prisoners."

But prison officials, Ohio executives and legislators paid scant attention, if any, to the report. Almost 5,000 men continued to be crowded into accommodations designed for 1,500. A new cell block was being built in the penitentiary. That would offer some relief, though not enough to make any substantial difference.

Then, on the evening of April 21, 1930, disaster struck—and the Society's report assumed sudden significance.

At sundown of that pleasant spring day some 800 prisoners were marched back from supper to their cells in the west block of the penitentiary. Guards were locking them in for the night when a sudden burst of flame, followed by a cloud of dense smoke, heralded the beginning of catastrophe. The fire began on the northwest corner of the roof

and, fanned by the wind, swept through oil-soaked rafters and burned down, setting fire to bunk mattresses and bedding.

Describing what happened next would even have taxed the literary talents of O. Henry, who spent three years in that penitentiary: the suffocating smoke, the flames, the screaming sirens, the frightened shouts of the trapped convicts rattling the bars of their cells, begging to be saved.

Thousands of prisoners poured out into the prison yard where state and Federal troops, augmented by the prison guard, used bayonets to prick the crazy mob into sullen obedience. Outside the prison gates, thousands of citizens milled around watching the spectacle of death.

In the west block, the shrieks of the trapped men being grilled alive stopped suddenly when the roof collapsed. Prisoners and guards worked side by side dragging out the dead and dying.

For hours, as firemen battled the flames and fought back rebellious convicts who cut their hose, prisoners milled about the prison enclosure until finally they were driven back into their cells or into other prison buildings.

Three hundred and twenty men died that day, and more than 230 others, burned and choked by smoke, were sent to the hospital. On the damp grass in the prison yard lay the bodies of those who had perished horribly of fire and suffocation, trapped in their locked cells.

Several of the convicts proved again that heroes are produced in the most unlikely places when the need for heroism arises. With the fire raging at its worst, one prisoner grabbed a sledge hammer and battered the locks off cell doors, releasing 136 fellow convicts. Another who was serving life for murder dashed through the cell block breaking locks and pulling out screaming men whose hair and clothes were afire. One convict, blinded by smoke, worked for a half-hour to get another prisoner out of the holocaust; on the lawn of the prison grounds he discovered that the man he had rescued was his brother. A no-

torious gunman carried twelve men to safety before he collapsed and died.

One of the guards said: "I saw faces at the windows wreathed in smoke that poured through the broken glass. With others I tried to get at them, but we could not move the bars. Soon flames broke into the cellroom and the convicts dropped to the floor. They were literally burned alive before our eyes."

Two of the dead men had cut their throats, "driven to suicide by the terror that grew on them as the flames mowed down their prison mates," wrote a correspondent for the *Cleveland News*.

One man who was being lowered to safety was accidentally hanged when the rope slipped.

In all the horror and confusion, only one prisoner escaped. He calmly donned a civilian suit and walked away unnoticed.

Two sessions of the Board of Inquiry appointed and headed by Governor Myers Y. Cooper brought out several points which tended to place responsibility for the disaster on the prison administration. Witnesses testified:

That Thomas Watkinson, guard in the cell blocks where men on the upper tiers were suffocated, refused to hand over his keys to other guards who finally took them from him by force and carried on rescue work until stricken. Watkinson was suspended by the prison warden.

That no lives need have been lost except for Watkinson's refusal to hand over his keys. (Watkinson testified that he had followed specific instructions of his captain, John Hall, but the latter denied his story.)

That Warden Thomas assigned his seventy-one-year-old chief deputy, J. C. Woodward, to command within the walls, while he took a post outside the prison.

That prison personnel had never received instructions for a routine to follow in case of fire and that no fire drill had been held among the prisoners within the memory of the warden.

That the first alarm came from a box outside the prison, indicating delay on the part of those inside the penitentiary in sounding an alarm.

Guard Hubert L. Richardson startled the committee when he testified that the cage door leading to the cells never was kept locked, inferring that someone locked the door after the fire started and that an argument among other guards as to whether it should be opened again was the reason for the delay.

Before the inquiry opened, members of the board inspected the fireswept cell blocks and found ample evidence of the speed with which the flames had spread. On the floors of blackened and vacant cells lay half-eaten candies, overturned checkerboards and open books, indicating that the men were enjoying their recreation period when the flames and smoke swept in on them.

At first it was believed that the fire had been started by a short-circuited wire hanging from the ceiling of the cell block in which most of the victims died. One convict witness said the wire, burning white-hot, was visible through the dense smoke, twisting and squirming among the wooden rafters, setting them ablaze one after another.

Almost a year later, however, two convicts confessed setting the fire in protest against being made to work on the new cell block being built. They said the fire was set with a lighted candle, then oil was poured over wood. The candle came from the prison chapel, supplied by other prisoners who knew nothing of the plot. The two confessed arsonists pleaded guilty to second-degree murder and were sentenced to life imprisonment.

But in spite of the incendiary origin of the fire, the finger of guilt for one of the worst prison disasters in American history was also pointed at the Ohio state legislature, which had had ample warning that a catastrophe might occur but had done nothing to prevent it. Warden Thomas revealed that for twelve years he had urged successive legislatures to relieve the overcrowding in the penitentiary.

And the Ohio State *Journal* supported Warden Thomas' stand in an editorial which declared: "Men in Columbus have pleaded with the legislature many times for betterment of prison plants and conditions, but their pleas fell on deaf ears." The Columbus *Evening Dispatch* placed responsibility for the holocaust "squarely upon the State. For many, many successive legislatures have dawdled over the prison problem . . . while defenseless human lives have remained in jeopardy."

Another Ohio newspaper, the Cleveland *Plain Dealer*, expressed the sentiments of shocked citizens throughout the nation when it asserted that the disaster meant that the State "must abandon a policy of neglect and indifference . . . the cries of men behind steel bars, held in a vise for creeping flames to devour, are ringing in Ohio ears. The State is more cruel than we believe if the cries are unanswered."

Hotel Fire at Sea

By Mary Evans Andrews

ASBURY PARK, N.J., September 8, 1934—In late afternoon, September 5, 1934, the luxury liner *SS Morro Castle* steamed proudly out of Havana harbor, headed for her home port, New York. Still new, with long sleek lines, she was a vacation cruise ship appointed like a floating Waldorf-Astoria. No one seeing her that day guessed that she was on her last voyage. No one aboard read that final name on her passenger list—the invisible, indelible signature of Death.

Some said the *Morro Castle* was a jinx ship. In September 1933 she had all but foundered off North Carolina's dread Cape Hatteras, in a hurricane that churned the ocean into sixty-five-foot waves. In November of that year, during a brief Cuban revolt, her superstructure was sprayed with bullets when she was caught in the cross fire between gunboats in Havana harbor and a shore battery. Twice her cargo holds had been damaged by fires of suspicious origin. But they were soon discovered and put out, thanks to an automatic fire-detection system which protected all parts of the ship *except its public rooms*.

The *Morro Castle* was in fact equipped with the most up-to-date gadgets to detect, confine and extinguish fires. All her apparatus had passed Federal inspection on August 4.

Secure in this knowledge, Captain Wilmott ordered only two stations to respond to the perfunctory fire drills held

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weekly. The men merely went to their posts and answered a roll call. The only drill of the present cruise was held during a tea-dance the day after sailing, and few passengers were aware of it. The captain had vetoed the suggestion that they participate in fire drills. The steamship line had also been told of his decision not to lower the boats. Such activity might, he thought, "cause undue anxiety" among the customers, who were scarce in these Depression years.

"Besides," said Captain Wilmott, "they're safer here than they would be crossing Times Square."

September 7, last night of the cruise, was squally. Rain and intermittent banks of fog, driving before a northeast wind, hid the choppy sea. The liner's deserted decks were silent except for the dismal wail of the fog horn. But her big dining salon was festive with colored lights, balloons, gay music and guests in evening clothes, having a final fling at the captain's traditional farewell dinner.

During the first course, Captain Wilmott collapsed, a victim of acute indigestion. As he was carried from the room, the noise of bells and buzzers died away. Gay confetti streamers flying from table to table drifted down in silence. The dinner ended on a subdued note.

Before dancing was to begin, an officer announced that the captain had died of a heart attack. All further festivity was canceled. Some of the guests adjourned to private drinking parties, but by 2:00 A.M. nearly everyone was in bed.

First Officer William Warms, whom death had promoted to command of the ship, was keeping watch on the bridge. Between 2:30 and 2:45 on the morning of September 8, the deck night watchman ran up to him.

"Smoke and sparks coming from a port ventilator amidships, sir!" he reported.

Warmes dispatched Officer Hackney, his second in command, to investigate. On the steps, Hackney met the salon night watchman running up.

"Fire in the writing room, sir!" he panted.

Together the three raced aft on B deck. At the far end of the writing room, flames were leaping from a storage locker, licking at near-by veneer-paneled walls, scorching highly inflammable hangings and furniture.

Hackney exhausted a fire extinguisher on the blaze before returning to the bridge. It was already apparent that hose would have to be used.

Minutes later, members of the aroused crew, responding to the fire alarm, ran past the heavy steel fire-doors designed to divide the ship into flame-tight compartments. If closed at once, these doors might have confined the fire to the area of the writing room. But no one had been assigned to shut them. The night watchman later testified that he did not even know their location.

Swiftly the flames ate through the beautiful but flimsy ceiling of the writing room, racing into the air space between ceiling and uninsulated steel deck above. Suction spread the fire with incredible speed through the hollow ceilings of the B deck salons.

Built for the tropic trade, the *Morro Castle* was honeycombed with air vents, portholes, ventilators, doors, stairways and elevator shafts. For a full half-hour she sped on at eighteen knots in a twenty-mile wind. As by forced draft, the flames were sucked down the ventilating system, which was not immediately shut off. Choking black smoke began penetrating into all parts of the ship.

At 2:56 A.M. the general alarm was sounded. But already it was too late to save many passengers. A few were too intoxicated or too seasick to respond. Women who stopped to dress were trapped in their cabins. No effort was made to guide passengers to safety by inside service stairs known only to the crew. Most of them, finding the familiar forward stairways ablaze, ran aft. The fire amidships soon became an impassable barrier, cutting off many of the passengers from the help of most crewmen, who had gone forward to fight the flames.

The remaining crew members and stewards broke windows of staterooms opening on deck and pulled people out, herding them into the nearest lifeboats. Many refused to dash from the corridors across smoking decks to the starboard boats. In panic they ran below again and thrust their heads through portholes, screaming for help that could not reach them.

On the port side of the ship, two lifeboats were already burning at their davits. A steward broke the screws holding a third boat. Three women passengers and six crewmen scrambled in with him. No one else was on that part of the deck. Quickly they lowered the boat beyond reach of the licking flames, but a few feet above the water its forward hook jammed. The craft hung at a forty-five-degree angle, while its occupants clung to the thwarts. Bursting windows on the upper decks showered them with hot glass and smoking embers.

Desperately the steward hacked at the fouled tackle. With a jerk the boat fell free. The men pulled at the oars with all their strength to escape the moving liner's suction. Blinded by smoke and the glare of the fire, they could see no one struggling in the water. So they struck out for shore—ten people in a lifeboat designed to save sixty-eight.

Eight of the *Morro Castle's* twelve lifeboats were launched, but of her 318 passengers, only eighty-five reached safety in them.

Most of the remaining passengers were now huddled near the stern rails on B, C, and D decks. A small group of women sang "Hail, hail, the gang's all here . . ." Others prayed aloud or stared in silent horror as the crackling flames burned closer. The *Morro Castle* plowed on, fanning the fire toward them. Those who gave way to panic and jumped were sucked under by the churning screws or quickly left behind to drown.

Meanwhile, in the radio cabin, fifty feet aft of the bridge, Chief Operator Rogers tensely awaited the command to send an SOS. Assistant Operator Alagna, dis-

patched to the acting-Captain for orders, had failed to get any.

Apparently Captain Warms still thought the fire could be brought under control. An SOS cost a company big money, and would cost the man who sent an unnecessary one his job.

At 3:10 A.M., Rogers was startled to hear the freighter *SS Andrea Luckenbach*, seven miles away, calling the Coast Guard Station at Tuckerton, New Jersey.

"Any news of a large ship afire off Sea Girt?" the *Luckenbach's* operator asked.

The Coast Guard had none.

Smoke was now curling up through the floor boards, fogging the radio room. Alagna wet a towel for Rogers to breathe through and hurried back to the Captain. He soon returned.

"They're running around like madmen on the bridge . . . I can't get any cooperation," he reported.

It was 3:15 A.M. On his own initiative, Rogers sent out a CQ ("stand by") message, to clear the air for the SOS he was sure would follow. At 3:19 A.M. he got permission to repeat the CQ. Seconds later the fire disabled his main transmitter.

Frantically Rogers and Alagna hooked up the emergency set. Smoke was now so thick they could barely see the hands of the radio room clock.

"Try the Captain again," Rogers told Alagna. "If you don't get an order this time, it'll be too late!"

In five minutes Alagna dashed back with the long-delayed command. At 3:24 A.M. Rogers, using the emergency transmitter, sent the first and only call for help from the doomed ship.

"*Morro Castle* afire twenty miles south of Scotland Light . . . SOS . . . SOS . . . Fire under radio room. Can't hold out much longer."

Then Alagna raced to the bridge to report, while Rogers, fighting off suffocation, stuck to his key. Emergency

batteries, bursting from the intense heat, threw sulphuric acid on the hot floor. Asphyxiating gas billowed up, stupefying Rogers. If I'm supposed to be dying, he thought, it doesn't hurt very much. I'm just getting awfully sleepy . . .

Then he heard Alagna's voice. "Okay Chief, let's get out of here . . . Captain's orders!" The assistant half-dragged him from the room as the furniture burst into flames.

At 3:29 A.M., electrical current had failed all over the ship. Electric pumps stopped; fire hose went limp and dry. The ship's communication system was silenced. Her electric steering gear ceased to function. The *Morro Castle* was in darkness and out of control.

Seconds earlier the bridge had signaled the engine room to stop the propellers. Smoke billowing down the ventilators was slowly suffocating the engine crew. Now without light, except for the flickering glare of the fire driven over the ship's sides by the wind, the men groped for their controls. They shut down the boilers to keep the liner from blowing up, connected auxiliary pumps to restore pressure in the fire hose, then crawled upward through an escape tunnel to the after decks.

At 3:31 A.M. the propellers whirled to a stop.

When the lights failed, panic increased among passengers massed on the stern decks. Prayers and cries of the terrified mingled with the screams of those who had been burned.

Among those at the rail stood a New York couple and their grown son. Through the rain they peered intently at the friendly lights of the Jersey coast. Father and son had often cruised these waters.

The father recognized Scotland and Ambrose lights. "We can't be more than seven miles out," he was saying. "The wind's directly on shore . . . Come on, I'm sure we can make it!"

In the semi-darkness the parents had failed to see that their son had no life belt.

"You and mother go ahead," he insisted. "I'm going to stay a while longer."

"Promise me you'll leave before the fire eats through that last partition . . . Good luck, boy!" his father shouted above the wind. His mother was too moved to speak.

The young man helped his parents over the rail and watched them leap together through black space into cold black water below. He knew there were no more life preservers. After waiting as long as he dared, he slid down a hawser trailing from the stern of the *Morro Castle*.

Two lifeboats passed half-empty as he and a dozen others clung desperately to trailing ropes. Flying embers and molten paint from the ship's hull pelted their arms and heads, while the seas grew constantly heavier. Toward dawn the fire burst through the partition of the dining-salon on C deck. A veritable rain of people leaped over the side, striking one another as they fell. Many sank at once.

Half an hour later the first lifeboat from the SS *Andrea Luckenbach* reached those struggling in the water. The young New Yorker was rescued after clinging to his rope for six hours.

First help to reach the *Morro Castle* from shore was a twenty-six-foot motor surfboat manned by five Coast Guardsmen. Half a mile from the liner they found the ocean lit by the glare of the fire and alive with tired swimmers begging for rescue. So many hands grasped the little boat's gunwales that she was nearly swamped. In five minutes she was overloaded. The *Luckenbach*, nearest of the rescue ships, lay two and one-half miles away. The surfboat headed for it, leaving behind as many people as she had picked up.

"The way their faces looked as they rose on the crest of a wave with the flickering firelight on them was awful," said a Coast Guardsman later. "But men and women were stacked like cordwood even across our engine box and we couldn't hold another one."

Her human cargo safely aboard the *Luckenbach*, the

launch hurried back. The liners *Monarch of Bermuda* and *City of Savannah* had now come up, and the little launch continued shuttling people to the big ships as long as her gas supply held out. In all, her heroic crew saved 112 lives.

Three fishing smacks, putting out for their morning catch, joined the rescue fleet and pulled eighty-seven exhausted people from the rough gray water, but some died on the way to port.

As a foggy dawn broke on the beaches, the lifeboats began to arrive, staggering and plunging through a heavy surf. Relief workers built bonfires, opened first-aid stations, welcomed survivors with hot drinks and dry clothing.

Out of one of the first boats jumped a mongrel pup, the ship's mascot. A seaman, offered a blanket by a Red Cross worker, solemnly wrapped up the drenched puppy.

All day the hissing breakers washed in the dead. Temporary morgues were established at three points along the coast. The largest, at Camp Moore near Sea Girt, held forty-seven bodies.

At the Ward Line's Pier 13 in the East River, desperately worried friends and relatives waited for rescue vessels to dock. Those who did not find their loved ones turned away with leaden hearts to await a funeral train bringing the dead from coastal morgues to Jersey City.

After everyone else had been removed from the *Morro Castle*, Captain Warms and thirteen of his crew, including Rogers and Alagna, stayed on the liner's forecastle head. The Coast Guard Cutter *Tampa* took her in tow. But the wind rose to a thirty-five-mile gale and the towing cable snapped. At Asbury Park the ruined liner beached herself. The cutter, which earlier had taken off the last handful of the exhausted crew, brought them to New York.

In the bright sunlight of Sunday morning, upon a gentle sea, the death ship towered over Asbury Park's Convention Pier which her stern had missed by only 100 feet. A crowd of 350,000 jammed the highways and lined the

beach to stare at her. Boardwalk concessions reopened to do a half-million dollar business.

Fire still smouldered in the holds of the gutted ship. Three warped lifeboats swung at crazy angles from her port davits. Deck planking was burned out except in the extreme afterpart of three decks where shoes, coats and handbags lay as their fleeing owners had dropped them. Only one body was recovered from the ship, which had also been the funeral pyre of her dead Captain.

One hundred and thirty-four people had made their last cruise aboard the *Morro Castle*.

As facts began to emerge from the inquiry, public indignation ran high. The cause of the fire was never determined, but the fact that human fallibility had let it get out of control was obvious.

The Acting Captain and Chief Engineer were sentenced to prison for incompetence and neglect of duty. The steamship line was fined \$15,000 for failure to enforce safety regulations and for placing the ship in charge of unqualified personnel. The palatial liner was a total loss.

Not until April, 1937, were the Acting Captain and Engineer finally cleared by a Federal Appellate Court which held that, had Captain Wilmott maintained proper discipline, the crew would have functioned in spite of his death.

Meanwhile Congress launched an investigation described as "the most exhaustive ever undertaken by any government in regard to its merchant marine." United States laws protecting life and property at sea were found to lag behind those of all other great maritime nations. A whole new body of protective legislation was drawn up, covering every phase of ship construction and operation.

The use of fire-retardant materials and the installation of sprinkler systems throughout passenger vessels became mandatory. The Federal Marine Inspection Service was re-organized and enlarged. Radio communications laws were modernized.

Even more vital was the far-reaching reform of laws affecting merchant-marine personnel. Higher qualifications were demanded. Pay was raised and hours of work limited. Living quarters and working conditions were improved.

The *Morro Castle* had been a fiery beacon by which men read again one of the oldest lessons of the sea—that *human* failure is more costly than *mechanical* failure. Those who died aboard her did not lose their lives in vain. They bequeathed to the traveling American public safer ships manned by abler crews.

Pageant of the Poor

By Robert J. Casey

LAMAR, COL., March 30, 1935—The trails of covered wagon days were slowly filling today with the vanguard of a people outward bound, defeated by the dust. For hundreds of miles along the Kansas-Colorado border stretches the desolation of a dead planet. The black blizzards swirl about toward the lost horizons and into a yellow sky. The bare bones of ruined farmlands lie gray and stark between the hummocks of dust. Forgotten fowl wander in and out of abandoned homes and the doors of vacant barns boom in the wind.

So comes to a tragic but seemingly inevitable close the cycle that began with the winning of the West.

The movement has not yet become a general exodus. Here a horse-drawn wagon driven by a dead-eyed, undernourished woman—a wagon filled with ragged children and the relics of a home; farther on a group of overburdened flivvers grinding their bearings to pieces in the grit. On the railroads a carload or two of scrawny cattle. But the relief authorities know that this is only the beginning. Fear has come to the people, not so much the fear of starvation, which has become familiar during the four years of cropless drought, but fear of the malign forces which can destroy, almost overnight, the work of many accumulated lifetimes.

There is no direction, no objective, to the flight from the encroaching desert. The grim faces of the migrants are

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set upon a vision: cool green fields, with water flowing from them, somewhere beyond the murk-mirrors, ironically enough the same vision that brought their forefathers out across the plains two generations ago.

An old man stopped his flivver at a filling station on No. 50, near the Kansas line. He needed oil and the attendant gave him the crank-case drainings of another car. He needed gasoline and he spread out a few pennies on a leathery palm. He needed food, but he was prepared to get along without that a while longer.

"People are pretty good," he said. "They'll always help you out when they can. The only trouble is that most of them need help themselves. I guess maybe there's nobody but poor people left in the world."

He was on his way to Ohio. He had come from there in the early nineties.

"Maybe I should have stayed there," he observed, more in conversation with himself than with anyone else. "Living was pretty tough where I came from. Grasshoppers and blight used to ruin the crops, but the farms never blew away that I remember. And there wasn't any of this dust."

His wife died last year. He guessed that maybe the struggle against the drought had been too much for an old lady. His children were all dead; he had had three of them. The last one, a son, had gone out with pneumonia a month ago.

"There weren't any crops, and the soil dried out and drifted off in the air," he said. "The cattle I had ate dusty fodder and they died off. There was no way to save anything; no money to do anything with; no chance of getting any, and the winds that take your farm and your living never blow away the mortgages. I could have stayed on relief; three-quarters of the people in my county are on relief, so there was no disgrace in that. But the dust was always there. And I didn't have the heart to stay and see

people suffer any more. I want to die some place where I can see the sun."

His aged car staggered off toward the east. The filling station attendant looked after him. "He's the fifteenth I've had this week," he commented. "Each day brings more of them. And I don't see any end to it."

Nor could anyone else see any end to it. Kenneth Welch, relief administrator, who cared for most of the population of Braca County, Colorado, has been quoted as saying that that region is virtually uninhabitable. Erosion control such as the Federal engineers, under Dr. F. L. Duley, have demonstrated at Mankato, Kansas, is the only hope for the country. But the maintenance of the people during the several years required for such rehabilitation is a problem to which the Colorado authorities have, so far, found no solution.

One whole township, near Garden City, Kansas, is on relief. Every man, woman and child in it is in the bread line.

Ninety per cent of the population of a county close to the Oklahoma line would starve to death save for the dole. Brent, Braca, and Powers counties, Colorado, have been hard put to care for the hundreds of families no longer able to provide for themselves. So has started the exodus.

The menace of the dust is not confined to the great plains region. A report from the Federal soil erosion control project, in the fertile belt that extends northward from Salina to Mankato, points out that last summer ninety per cent of the wells on the 629 farms in the region served by the project were dry. Water had to be carried from community wells located and dug by the government. Under such conditions it was impossible to keep livestock, and now one of the most productive regions in Kansas is virtually without cattle.

The wheat is coming up fairly well, but cannot live without the rain which no one can promise. And the gov-

ernment is facing the acute problem of saving a hopeless people as well as their shifting lands.

In the creek bottoms west of Colby, Kansas, lie strewn the carcasses of crows, smothered by the dust that overtook them in mid-air. No one talks of the jack-rabbit plague any more, and there are rumors that the dust has killed them, too. State health authorities in the arid regions agree that the black blizzards do not carry pneumonia germs. But six persons died last week near Springfield, Colorado, and pneumonia cases are numerous in western Kansas.

Thousands of families survived last year because the Agricultural Adjustment Administration gave them compensation for agreeing not to produce anything on certain specified acres of farms that were not going to produce anything anyway.

The Federal Emergency Relief Administration is now at work to provide employment for them on their own farms. The Department of Agriculture is preparing to mobilize thousands of tractors on the dust frontier for strip-listing—to dig the ripples that perhaps may anchor, temporarily at least, the flying soil. These factors, plus man's unwillingness to uproot himself from the places where he once prospered, have kept many farming communities of this region intact. But the rain never falls, and the crops fail to come up, and the dust goes on forever. And one vast section of the West is getting tired of a futile struggle.

So the roads are filling with rusty cars that seem to have been disinterred from the burying places of the pioneer flivvers. Homes are emptying. Thin men stand on highways, with their thumbs pointed east—outriders in the pageant of the poor.

EDITORS' NOTE: *Spurred into action by the disastrous dust storms of 1935 and 1936, Congress in 1937 enacted a far-reaching, multimillion-dollar program to "harness the black*

blizzards" and bring the Dust Bowl back to fertility. Contour planting and other erosion-control measures were put into effect, along with a carefully designed water-conservation program. Wheat farmers were insured against losses due to weather, and government loans were made available to help tenants buy the farms they worked. Some four million acres of land in the Great Plains area were contour-listed in an effort to reclaim them from the dust.

By 1939, the results were already apparent. Less than a quarter as much land was blowing as had blown in 1935 and 1936, and more than three-quarters of the planted wheat acreage was harvested. In 1940 and 1941, conditions were even better. The dust had been defeated, temporarily, at least. But during the war controls over wheat production were removed, and plows again began tearing up the earth, including more than two million acres which the Soil Conservation Service had classified as unsuitable for cultivation.

In February, 1946, a committee of the Department of Agriculture reported that 3,425,000 acres in Kansas, Oklahoma, Texas and New Mexico were again "in condition to blow." By early March they were blowing. And in April, 1948, the Associated Press reported a severe dust storm in western Kansas—the worst since the early '30s—with strong winds that sometimes reached fifty miles an hour.

It looked as if the "black blizzards" were back.

Five O'clock, Off California

By George W. Campbell (Lieutenant, United States Navy.)

POINT SUR, CAL., February 12, 1935—*Whooo-ee—whooo-ee—whooo-ee!* The siren splits the darkness. The foghorn voice of the master-at-arms follows through:

"Hit the deck! All you cloud busters, rise and shine!"

We tumble out, methodically put on our flying clothes, step out into the crisp dawn of the Sunnyvale base.

The first streaks of morning sift into the hangar as the huge doors, 200 feet high, roll back and expose the great bulk of the *Macon*.

Roaring in unison, her eight engines spin the propellers. The engines warm up, signal bells clang, throttles close. The staccato beat of each twelve-cylinder unit dies to a cough, a final chug.

"All departments ready for flight, Captain," the officer of the deck reports.

Captain Wiley nods to the mooring officer. Two hundred men stand ready for action. They comprise the ground crew and man the mooring gear. The mooring officer blows his whistle.

"Walk the ship out!" he calls through a megaphone.

Four hundred tons of mooring gear steadily draw the 785-foot giant from the hangar.

We swing the *Macon* into the wind. The last hatches are closed for the take-off.

"Get ready aft! Get ready forward!" commands the captain.

Excerpted from The Saturday Evening Post of May 15, 1937; copyright 1937 by the Curtis Publishing Company, Philadelphia, Pa.

"Heavy aft!" reports the officer in charge of that station.

"Two thousand pounds heavy forward!" calls out a member of the mooring party atop the mast.

The first lieutenant jerks the toggles controlling the water-ballast valves. Tons of water gush from bow and stern.

"Two thousand pounds light forward, sir!"

"Two thousand light aft, sir."

She's ready, buoyant.

Here in the control car, the captain glances quickly around. Every man is at his station—the rudder man forward at the wheel, the engineering officer at the engine-room telegraphs, the elevator man at the port side, the wheel firmly in hand, and the first lieutenant beside him. The officer of the deck is bending over his log, the radio man at his telephone.

"Up ship!"

At bow and stern, the ground crew goes into action. Holding-down bolts and securing lugs are released. A distinct metallic click comes from the nose as it jerks loose from the mooring cup.

"Four engines, up standard speed," orders Captain Wiley.

Engine-room bells clash on signal from the control car. A rhythmic roar echoes over the field. The three-bladed propellers, each more than sixteen feet in diameter, spin.

"Rising 200 feet per minute," says the first lieutenant. "Increasing, sir."

We are free, air borne, as free as the winds in which we move.

We set our course over the Santa Clara Valley. It is our short cut to the sea, where we will join the fleet.

We climb into the dreary heavens. At 2,000 feet we level off.

Four specks rise from the ground and dart toward us: our four fighting planes, which nest ashore in their separate hangars and join us only when we are well under way.

In a few minutes they are droning around us like hornets waiting to hive.

We call our hornets by radio. "No. 1 stand by to hook on . . . Calling No. 2 . . . Calling No. 3 . . . No. 4—No. 4. Calling you. Come aboard in succession."

The planes break formation, swoop to the rear. They stretch out in a long line as they approach "the groove," preparatory to hooking on.

In our airplane hangars back in the Macon belly, two members of the handling crew loaf nonchalantly on a six-inch girder above the trapeze. The wind beats their slapping pants legs viciously.

"On your toes, hangar crew!" shouts the officer in charge of operations.

Shaky Davis and Pete shift postures on their girder. Only a fine sense of footing prevents them from plunging into 2,000 feet of space below.

But they are veterans—not only of the *Macon* but of countless air cruises before, as are numerous others scattered through the vast hull. Captain Herbert Wiley, the skipper, is the only officer survivor of the *Akron*. But others of us—Lieutenant Harold Miller, Lieutenant Anthony Danis, myself, numbers of the petty officers and enlisted men—had had many months of service on the *Akron*, some of them even on the old *Los Angeles*, before we commissioned the *Macon*.

It is late in the afternoon of our second day out, February 12, 1935. In the smoking room, I inhale the last drags from a cigarette. Eight bells, nearly time for my trick on deck in the control car.

I see a long squall line. For most of the afternoon we have been in soupy weather. Fog banks roll in from the west and northwest, obliterating the coast line. Far to the east, only the highest peaks appear above the cloud formations.

The squall line lies directly in our homeward path. As far as the eye can see, it extends across our bow. Its lower

fringe is jagged. Long wisps of ominous black strands hang down to clutch the spume of a choppy sea. It rolls and twists, breaks into fragments and then rejoins the conformation. Black, dirty weather.

"Here comes No. 1!"

A lone plane circles the ship. The pilot is Lieutenant Min Miller, just returned from a reconnaissance flight over the fleet, fifty miles north of us. In spite of the sour weather he has performed his mission, and now returns from the mists which swallowed him several hours before.

Min comes scrambling down the ladder which leads to the smoking room from the interior of the ship. His heavy flying suit is spattered with rain. He swings his benumbed arms, chilled and cramped from the narrow cockpit. Unfriendly blasts have left their marks on his face. Deep lines appear when he yanks off his helmet and goggles.

"Right nasty out," I grin, and offer him a cigarette.

"If you think this is bad, you should see what those poor battle-wagon sailors are taking down below!" He lights the cigarette. A long stream of smoke curls from his mouth. "I saw 'em all. The entire fleet is ahead. And are those ships taking a pounding!"

I put out my cigarette. The hands of the clock are pointing to five minutes of four.

"Back to the grind," I say as I open the door to go on watch.

The ship is flying easily. We decrease altitude from 1,750 to 1,250 feet to get under a lowering ceiling. The wind is kicking up. To keep schedule, we cut in two more engines and speed up.

The squall line moves in. Howling winds strike with malicious might to turn the ship from her course. The compass needle swings dizzily, but comes back quickly to meridian as the rudder man strains at his spokes.

In a few minutes we run out of the squall. We hold our course along the coast. Presently we sight the fleet, en route to San Francisco. The 35,000-ton battleships bob

like corks. Green seas break over their bows. Curtains of flying spray almost shut them from view. Cruisers and destroyers cut crests and dive with mad abandon.

We run into a second squall line. This disturbance strikes with less violence. For a short period we are in the total darkness of the cloud. Heavy rain pours from the sky. It falls from the rain strip around the underside of the ship in long streams. On the other side of the troubled area, we break into smooth air. The wind decreases.

"There's Point Sur! It's two points on the starboard bow, sir"—our navigator points the light out to the captain.

It is five o'clock.

In a whistle and a jump, we'll be home. A snappy, happy landing, the ship housed in the hangar. Then for a shower and a bed with springs, a bed that doesn't heave with every blast of wind.

Point Sur's kindly light is giving us warm welcome, guiding us home.

It happens.

A thundering clap reverberates through the ship. A murderous gust strikes the ship aft. It grabs the tail like a giant hand and shakes the ship as if it were a willow wand. We hang on to keep our footing. The nose dips at a sickening angle to starboard and heads for the sea. Simultaneously a crackling report of destruction rings from stern to bow.

It can't be—she can't be breaking up!

But I have heard that growl of annihilation once before—some three Februarys before, when the *Akron* snapped her mooring cables like spider webs. The sound is never forgotten!

Instantly my arms reach the engine-room telegraphs, and with one swoop I bring all engines to idle. If we are going to crash, we aren't going in at full speed, to rip and tear and strew the ocean's floor with the pieces for miles.

"Elevators don't answer!" yells the elevator man, Conover, metal smith first-class.

"Rudders don't answer!" repeats Clarke, coxswain.

"Report as soon as they answer," commands the skipper crisply.

The stricken *Macon* hesitates. After long seconds, her nose rises; she comes to an even keel. But immediately afterward, the tail, more than 500 feet aft of us, begins to settle toward the sea, the nose rises, goes up and up. She is at a giddy angle; the bubble slides to 22 degrees and then goes off the scale.

The telephone rings. "This is Davis, sir"—old Shaky, who flew them all. "Part of the top fin is carried away, sir. I was right there when she went."

The top fin gone from the ship! Sounds incredible.

"The place where I was stepping on went with it. No. 1 gas cell carried away. I'm comin' forward." The voice is more than 100 feet above me and several hundred feet back in the top keel.

The ship crumbling, breaking. Why, we've been in much worse weather than this and survived!

"Ballast aft," commands the skipper.

Lieutenant Commander Bolster, the *Macon's* first lieutenant, reaches up and grabs a handful of toggles.

"Dropping emergencies aft," he replies. Water spills from the stern section in 1,000-pound splashes.

"Drop slip tanks aft," Captain Wiley orders, and I repeat the command over the telephone.

The riggers along the side keels snip the holding wires, and from the control car we sight the slip tanks—fuel tanks—each holding 720 pounds of gasoline, crash through the fabric cover like fat bombs and go spinning into the frothy sea.

"Hold hard down elevator . . . Rudder amidships." The skipper has full command of the situation.

The angle increases. For a moment it seems that the *Macon* will stand on her tail. Ballast rains down from the

broken section; fuel tanks, removable weights shower the ocean.

We must keep her in the air, free from the sea that will claw her, tear her into bits and then swallow her. If we can only get the tail up. Fly her out and get her home. If—. We are not thinking of our lives. We must save the ship.

"Radio the fleet," the skipper commands. "To Commander-in-Chief. *Macon* in distress ten miles southwest Point Sur."

Over the voice tube to the radio room overhead, I repeat the message. The radio man repeats back, calmly cold. In a flash, the fleet has the news.

The altimeter needle moves steadily to higher altitudes. At least we are spared the possibility of an immediate crash . . . Now 2,000 feet. We enter clouds, thick as paste.

We try the engines. The speed increases the angle. We slow—2,500 feet . . . 3,700 . . . we hit 4,600 feet.

"Stopped rising, captain."

"Very well. Order all hands that can be spared from aft to move forward. That'll help trim her."

The message is shouted over the telephone and men move forward.

To hold the tail up, the elevator man throws the wheel full down. He grits his teeth and braces himself. He's wondering if he can hold out. It's asking a lot of two arms—two arms against 1,200 square feet of control surface pounded by a beating wind.

"Try a little longer," I say.

He smiles and the muscles in his arms stand out like cables.

"No. 2 gas cell carried away."

Each report brings news of destruction. The ship settles—down—down—3,600 feet. We stay there, but not long. We are drifting into the coast. The wind has slewed us around. We don't want to crash along the coast line of high granite-sided peaks.

"Ahead on the port engines, idle starboard."

The captain is turning her with engine power. We are headed back to sea; the stuff outside is still thick.

Reports continue to flow into the control car. Discipline—discipline as it should be.

"Airplane hangar manned and ready to launch planes."

Launch planes? We can't at this speed and inclination. It would be suicide. The ship's nose is pointed at the moon—if there is one or ever will be again. Besides, we need the weight of those planes, 14,000 pounds, right where it is—forward, to trim the ship.

Bells clash in the engine rooms as we call for speed. We have control and we are buoyant. But this angle—it persists.

The ship rises to 5,000. She teeters from bow to stern. Her movements are those of a punch-drunk fighter.

"Zero cell carried away! Tail structure collapsing!"

Disintegrating at 5,000 feet and no parachutes on board! Airships never carry them. We'll have to ride her down and take a chance on setting her in easy. We must set her in easy. If we don't, it will be the last ride for a lot of us.

"Permission to valve forward, sir?"

"Granted," is the captain's terse reply.

We valve from the forward cells. It tends to restore the trim. We start down—4,000 feet. The nose jerks up; she begins to climb again.

"Tail carrying away aft!"

"Valve forward."

"Aye, aye, sir; valving Cells 8 and 9!"

She settles. The red liquid in the variometer slides down; we hit the scale where it reads 1,000 feet per minute. Down—down. At 2,000 feet we break into a clearing. We stop valving and check the rate of fall. The angle of inclination is still holding.

We cannot fly her out!

"All hands stand by to abandon ship. Launch life rafts as soon as we are in the water."

Conover still holds the elevator wheel. He rivets his eyes on the altimeter. He has no thought of quitting her—she is still in the air and he has the wheel.

"Ballast forward . . . Check her fall." The skipper is as calm as when making a landing at the base.

Commander Kenworthy, executive officer, heaves flares over the side to show our position. The torches dot the water like markers along a torn-up street.

A thousand feet—settling. Schellberg, bos'n's mate first-class, rushes into the control car and distributes life jackets. I am still ballasting.

"Here you are, sir." He slips it around me, one arm at a time, while my free hand still yanks ballast toggles. I hope she hits easy—gentle—without great loss of life.

The captain hangs out of the window, watching the tail section.

"Back all engines."

The air-speed meter shows less than ten knots.

"Stop all engines."

It is the captain's last command to his beloved ship.

"The tail is in the water."

Thump—the jar comes from aft—she strikes gently, obedient to the end.

"All hands pick a window and jump before she hits forward!" The skipper releases us from our posts of duty.

Every man for himself now. We pick our windows, hang from the ledges; the water comes up to meet us; we let go. Down into icy water. Whew! Gallons of it enter my gaping mouth.

On the crest of a wave, seemingly miles away, I sight two life rafts. I struggle to swim to them. Only my right arm works; my legs are dead.

Captain Wiley calls to me. He is about to grab hold of one of the rafts. He turns from safety and swims to me.

He grabs me by the collar and we make for the rafts. Life begins to return to my legs. We reach the rafts.

Several men already are on board. They had been in the side keels when the ship struck. Without further orders, they had kicked holes in the outer cover, heaved the rafts overboard and inflated them with the attached air bottles.

We are too spent to clamber aboard, so we hang on for a while. The men on board are out, exhausted. Several other shipmates swim to the raft. Together we help one another aboard. One lad is stretched out across the center of the raft. His arms trail in the water, and the drizzle of the rain beats on his upturned face. We can't help him, for we are all gasping and vomiting salt water.

Our raft is made to hold seven, but we have twelve on board. Water slops over the gunwales under the heavy strain. The wind drives us back toward the *Macon*. She is in the water from the tail to a point about 200 feet forward. Her nose is inclined at a grotesque angle. She is still settling, and men are jumping into the sea from all parts of the ship. We pick them up as fast as we can get to them.

A deep rumbling roar fills the air. It is a symphony of snapping, twisting girders. Gas valves sing a high note and release helium. It goes with a swish. Engines crash from their bases and fall into bottomless deeps. The sky queen's dress of silver rends in a thousand directions and dangles piecemeal, exposing shattered ribs.

"Stand by in the rafts! We're coming down."

In the gloom of the evening I see twenty, maybe thirty, men perched on top of the ship. Like crows they stand silhouetted against a bitter sky. Lines drop from the bow and men slide down them, tearing hunks of flesh from their hands.

Men are coming down pellmell. They must hurry, for suffocating gas is escaping around them. The ship's nose is still high in the air—nearly 150 feet. Directly below, a group of men mill around in the water. They are ex-

hausted and need a boat. From the mooring cone high overhead dangles a line. Attached to it is a rubber boat, uninflated. Men in the *Macon's* bow attempt to reach the line, but they cannot.

William Bucher, ship's cook, sizes up the situation. He's fed those men hundreds of meals. He can still serve them. Without hesitancy, he climbs out to the mooring cone. He sways in the breeze as he shinnies down the line. Foot by foot nearer to the boat that is so badly needed. He reaches it, cracks the valve on the air bottle and inflates the raft. His fast-ebbing strength is used to cut the boat free, and it falls to his shipmates, who are all but gone.

Bucher takes a turn around himself with the end of the line and hangs there until the ships sinks low enough to permit him to tumble off near a waiting raft.

The last man is off. There is nothing to do but wait.

"Lights ho!" We mount the crest of a wave and see the lights. They appear in the southwest. A long beam sweeps over us and for a split second shines on the disintegrating *Macon*.

Then our joy suddenly turns to deep silence. A man in my boat coughs hoarsely.

"They've turned away. Didn't see us," he says.

The *Macon* is about gone—a few feet of her nose only above the water, pointing directly heavenward. It stands like an obelisk. A final crescendo of escaping gas is her death rattle.

"There—there she goes!"

She slides under and the seas close over. A man near me brushes the back of his hand across his face.

"Damn the rain," his voice quivers.

It isn't raining any more.

The wind becomes colder. The night blacker. Gasoline fumes are heavy in the air. The burning flares drift into the spreading fuel and ignite it. We paddle furiously to escape onrushing flames.

Again the lights draw near. We can see the red and green running lights.

"Ship ahoy! Ship ahoy!" We shout, scream, whistle, wave our paddles aloft.

They see us. Anchor chains rattle down hawse pipes. Boats are launched. We go aboard.

Our rescuers search the seas late into the night for bodies* and wreckage. I toss fitfully in my bunk. From the port I can see the gasoline still burning. It writes in diabolical shapes over the sea that claimed our ship.

The beacon on top of the hangar at Sunnyvale still flashes, waiting to welcome the ship that did not come home.

But someday—someday, maybe, it will shine for us again. Someday, maybe, the empty field will resound again to the command: "Up ship!"

If it does, I hope I'll be there. Because I want to see the skipper and Min and Buck, Hammond and Bucher, Pete and Shaky Davis. The engineers, Jake and Pat.

They'll all be there. And they won't miss any bells!

* Because of the efficient "abandon ship" maneuver aboard the *Macon*, only two of her crew of eighty-three were lost. When the *Akron* sank in the Atlantic Ocean in April, 1933, seventy-three officers and men went down with her; and when the *Shenandoah*, first American-built rigid airship, broke in two and crashed in Ohio in September, 1925, fourteen of her crew of forty-three died.

The Roof Fell In

By Seymour Parnes

NEW LONDON, TEX., March 18, 1937—On the morning of March 18, 1937, there were ninety-two Seniors awaiting graduation two months later from the Consolidated School at New London, Texas. That same afternoon, only one of them was still alive. The other ninety-one were among the 413 students and fourteen teachers who were blasted to death in the worst school disaster in America's history, far exceeding the toll of 174 when an explosion wrecked the Lakeview School in Collinwood, Ohio, near Cleveland, in 1908.

The Consolidated School was a new school, a rich school—one of the finest rural education plants in the entire country. Its brick buildings, model home-economics kitchens, playgrounds, sewing rooms and laboratories had been built with the handsome royalties from East Texas' black crude oil. Its two main buildings represented an expenditure of \$1,000,000 to serve an area thirty miles square. Its enrollment in 1937 was more than 1,500.

Classrooms in the school were heated by individual radiators using natural gas. And it was an accumulation of the highly explosive gas, possibly ignited by a spark from a light switch, that set off the murderous charge which reduced the school to a mass of twisted girders and broken stone, and plunged the entire East Texas oil area into mourning.

The primary grades had already been dismissed for the day. The rest of the students—about 690 boys and girls in the high-school wing—would have been dismissed in

another ten minutes. But the treacherous accumulation of gas did not wait for the closing bell before exploding.

"The roof just lifted up. Then the walls fell out and the roof fell in," was the way William C. Shaw, the school superintendent, described it. Yes, the roof fell in, and when it did it buried pupils and teachers in the ruins. Few of them got out alive.

Fifteen-year-old Paula Echols and twenty other students were in an English class when the blast came. She saw the building shake and the roof fall in. Paula was pinned beneath her desk, but another student dragged her out a window to safety.

John Nelson, seventeen, was working on a lathe in the basement manual-arts shop. Fifteen other boys and the manual-arts teacher were only a few feet away. Suddenly something hit Nelson's leg and slit the front of his trousers. "It felt like a charley horse you get playing football," he said later.

Upstairs, watching over his mother's class of twenty-five youngsters, was Nelson's brother Don, a twenty-four-year-old oil worker. When the building exploded, showering his charges with plaster, Nelson herded the children out into the open. His mother, who had gone to another part of the building, was killed.

The schoolyard was littered with bodies as Nelson emerged with his flock. With two other men, he crawled back into the ruins and found ten children, badly frightened but unharmed, huddled under a heavy bookcase.

Martha Harris, eighteen, was a short distance away when the tile roof of the building soared skyward, then fell in with a sickening crash. "I was in the home-economics building about sixty yards from the school when I heard a terrible roar," she said. "The earth shook and brick and glass showered down. I looked out a window and saw my friends dying like flies. Kids were blown out through the top onto the roof. Some of them hung there and others fell off two stories to the ground. I saw girls in my class

jumping out windows as if they were deserting a burning ship.

"My brother Milton jumped from the second story and didn't get more than a bruise on his knee when he hit the ground. I saw a girl fall out of the top story down through a big window which opened to the outside. The glass cut off her leg just as a sharp knife would have. The limb was hanging by a thread.

"In the yard after the explosion, bodies were stacked up like hot cakes. I'll never forget how my playmates' bodies were torn; some of them were blown to bits. It was horrible."

Bernice Morris, seventeen, who was in the mechanical drawing room on the ground floor with three other students and a teacher, was blown out of the building, but lived. "One of the boys in the room broke through the debris around a window, and all of them got out safely," she said.

For miles around, horrified parents and oil-field workers heard the ominous roar. Pumps were shut off under derricks as workmen ran toward the scene of the disaster. Fathers and mothers, many of whom had been attending a Parent-Teachers' Association meeting in the school gymnasium, rushed out, terror-stricken. Kindergarten tots tumbled from the school buses lined up to take them home. The scene that met their eyes was appalling. Victims of the blast looked "like rag dolls with their clothes blown off." From beneath the wreckage came horrible screams and cries for help.

Soon fifteen hundred workers were pulling frantically at the debris, passing up the bodies of those obviously dead in an effort to get to those who still lived. Oil-field laborers set up a glaring battery of searchlights to facilitate rescue efforts. Scores of acetylene torches bit through the twisted steel girders which had supported the building.

Just before dawn, Mrs. Tracy Tate, a schoolteacher, was lifted alive from the bottom of wreckage piled twenty

feet high. Said worker K. G. McDonald: "I put my hand on her leg as I helped haul her from the debris, and I felt the muscles twitch. She died as they placed her in an ambulance."

No fire followed the explosion, though a sheet of flame shot up momentarily. Few of the bodies bore any evidence of burning, but many were so badly crushed that identification was almost impossible. Many had been killed so quickly by the concussion that they still had smiles on their faces. But many, many more had been horribly disfigured. Shoes, caps, shreds of clothing and schoolbooks lay everywhere. Grief-stricken mothers, many sobbing hysterically, followed rescue workers or moved from group to group of the dead in search of their own children.

In every conceivable type of vehicle the dead were taken to morgues in towns within a fifty-mile radius to be prepared for burial. For the living, schools, grocery stores and churches were pressed into service as temporary hospital wards. From Houston, the advanced classes of the Landig College of Embalming rushed to the scene in a chartered bus. There was more work for them than for the doctors, who said that nearly every victim had died of a fractured skull.

Governor James V. Allred, wired the news of the catastrophe in Austin, was at first inclined to think that it had been "exaggerated." But he soon was convinced that, if anything, it had been underestimated. Quickly he declared martial law, and ordered National Guard troops from Tyler, Longview and Marshall to the scene. Next he set up a military court of inquiry to begin an investigation.

Meantime, Albert Evans, regional director of the Red Cross at St. Louis, rushed by plane from Little Rock, Arkansas, where he had been engaged in flood relief, and plunged into the heartbreaking task of compiling an accurate list of dead and injured, at the same time setting up an emergency relief program.

A hard driving rain in the early morning hours after

the disaster hampered the work of digging in the wreckage for bodies. Workers, stripped to the waist, passed bricks and debris along an assembly line, while youngsters darted about picking up schoolbooks that had been blown hundreds of feet.

More than twenty-four hours after the explosion, tight-lipped parents still plodded from morgue to morgue in search of their children. With trembling fingers they gently pulled away sheets and stared at the mangled features of what might or might not have been their sons and daughters. The task of identification was so difficult that fingerprints of Texas school children taken the year before at the Centennial exposition were rushed from Dallas.

For two days after the catastrophe New London's streets were a cavalcade of death. In Pleasant Hill Cemetery, workers labored in shifts to dig 400 graves. On Saturday morning a deathly silence hung over the area. Every store except the telegraph office was deserted. And on Sunday, families buried their dead in a great mass funeral, while nurses stood by to give first aid to mourners who collapsed or fainted.

Then the military court of inquiry appointed by Governor Allred started its investigation. There was a momentary stir when twelve sticks of dynamite were discovered in the ruins, but it was quickly established that they had played no part in the disaster. Superintendent Shaw, whose seventeen-year-old son was among the dead, testified that "to save about \$250 or \$350 a month," the school janitor had installed a connection to take natural gas from the near-by waste line of the Parade Oil Company and pipe it through the basement to the school's radiators. Officials of the oil company said they had not given the school permission for the connection, but Shaw replied that they had not "particularly objected."

The United Gas Company revealed that up to January 1, 1937, it had sold the New London School Board a

natural gas mixed with a telltale odorant that might have prevented the blast.

Dr. E. P. Schoch, chemistry professor at the University of Texas and an expert on gas explosions, inspected the tangled wreckage and later asserted that many of the gas radiators lacked proper flues. Of the six radiators left intact, only one had a satisfactory vent.

"It's simple," said Dr. Schoch. "The walls were filled with gas that had no other exit. Then there was a spark, and the walls burst. The condition of the bodies bears that out. They were *blown* to death, not burned to death." Dr. Schoch added that "if only one of the seventy-two $\frac{3}{8}$ -inch connection pipes through the basement was left flowing accidentally for seventeen hours, the maximum saturation point would have been reached."

The court of inquiry concurred with Dr. Schoch's findings, and decided that gas in the school basement had supplied the charge for the murderous explosion.

The most ironic note in the entire story of the New London tragedy was found among the wreckage. It was a section of blackboard blown out of the shattered building. On it someone had scrawled these words:

"Oil and natural gas are East Texas' greatest mineral blessings. Without them this school would not be here, and none of us would be here learning our lessons."

The Last Flight of the Hindenburg

By Commander Charles E. Rosendahl

LAKEHURST, N.J., May 6, 1937—During the early months of 1937, both the *Hindenburg* and the *Graf Zeppelin* had been thoroughly overhauled and groomed in Germany for further conquests. As the beginning of the 1937 schedule approached, the *Hindenburg* made several European flights. During these, Major General Ernst Udet of the German Air Ministry conducted experiments of hooking his airplane onto the *Hindenburg* and being launched from it in flight. Although the utility of such complementary uses of the airplane with the airship had been demonstrated for years by American naval airships, Udet's experiments with the *Hindenburg* represented the first practice of this kind with commercial airships.

There followed a round trip to Rio de Janeiro on which that patriarch of airships, Dr. Hugo Eckener, went along to participate in the formal opening of the new airship terminal facilities at Rio. Upon the *Hindenburg's* return to Frankfurt, all attention was concentrated on the opening of the 1937 service over the North Atlantic and the eyes and minds of all concerned were magnetically drawn westward to Lakehurst, New Jersey.

Following negotiations through the usual official channels, the Navy Department of the United States had issued a permit for use by the *Hindenburg* of certain airship facilities at its airship base at Lakehurst that were not

Excerpted from the book Zeppelin, the Story of Lighter-than-air Craft, published at \$3.00 by Longmans, Green and Co., New York, N. Y.; copyright 1937 by Longmans, Green.

being used by American airships. The permit was granted in return for payment to the United States for all services received by the *Hindenburg* at Lakehurst and a disclaimer of expense or risk on the part of the United States.

The takeoff of the *Hindenburg* for the first scheduled North Atlantic flight in the 1937 series took place on May 3, at 8:00 P.M. Central European Time, from the new Rhein-Main World Airport, in ideal weather conditions. On board were thirty-six passengers representing five nationalities. The Danish Minister of Transportation, who was to have made the trip with one of his officials, had to cancel his reservation at the last moment. In command of the ship was Captain Max Pruss, whose airship experience dated back to World War I; his crew included two other captains, Albert Sammt and Heinrich Bauer.

As Director of the Deutsche Zeppelin Reederei, Captain Ernst A. Lehmann came along on this 1937 inaugural trip; also Captain Anton Wittemann of the *Graf Zeppelin*. Although the normal crew of the *Hindenburg* was about forty, a considerable number of younger airship men was carried in addition for training purposes, bringing the total crew up to sixty-one. Among them were Dr. Rudiger, the first doctor ever to be carried regularly in the crew of any commercial aircraft, and the first airship stewardess, Mrs. Imhof. There were, then, 97 persons on board the *Hindenburg* on this trip.

Within a short time the city of Cologne was reached, the shadowy outline of its famous cathedral silhouetted against the city's lights. The course then proceeded as customary via Holland to the North Sea; there thunderstorms over the Channel made it advisable to detour to the north. For a while the weather remained unpleasant but not severe, with bad visibility; neither the French nor English coasts were sighted. Over the ocean the ship took a course somewhat more northerly than that generally taken by steamers at this time of year.

On the afternoon of May 5, the coast of North Amer-

ica was first sighted near Newfoundland. Large horseshoe-shaped ice fields pushed their way into the sea, and closer to shore numerous icebergs of varied and fantastic forms floated about. For the benefit of the passengers, the ship flew over the crystal-like, glittering ice forms.

Now the ship's course was changed to a generally southerly direction, passing the lighthouse at Cape Race and several lonely coastal cities. As had been experienced on practically the entire trip, head winds persisted, now blowing at forty-five- to fifty-mile-per-hour velocity at flying levels. However, there was no turbulence during the flight, merely the slowing down of the ship's speed over the surface because of opposing winds.

It was noon on May 6 before Boston was reached; by three o'clock the ship was over New York City and then soon headed southward for the vicinity of Lakehurst. Although the scheduled time of arrival set many months in advance had been 6:00 A.M. on May 6, the head winds had caused Captain Pruss to radio that he would delay the landing time until 6:00 P.M. that day. Hence, although the ship arrived over the Lakehurst field at about a quarter-past-four, no attempt was made to land before the announced time of 6:00 P.M. since the arrangements necessarily involved not only the ground crew at a designated time but also all those officials customarily associated with the official entry of a foreign commercial vessel.

Meanwhile, a weather "front" accompanied by rain and thunderstorms was moving in from the westward. Cruising in an area a few miles south and southeast of Lakehurst, the *Hindenburg* awaited the passage of this front at Lakehurst, then proceeded westward, coming in behind the front. Although the ground crew stood in readiness at six o'clock, heavy rain and a thunderstorm made it advisable for the ship to stay clear until the weather improved.

As the thunderstorm passed and the rain practically ceased, I sent a radio message to Captain Pruss recommending that he come on in and land. Hence, at about

7:00 P.M., Eastern Daylight Saving Time, the *Hindenburg* came into view and passed over the station on a northerly course at an altitude of 500 to 600 feet, to have a look at surface conditions. The ground crew consisted of some ninety Navy enlisted personnel together with a proportionate number of naval officers, and 138 civilians recruited from the vicinity, practically all of whom had at one time or another been employed at the station and hence were familiar with airships and their landing and mooring.

After circling, the *Hindenburg* came back over the station, adjusted her trim and static conditions by valving hydrogen and dropping ballast in perfectly normal fashion, headed into the wind, descended to about 200 feet altitude, backed down on her engines to check the headway of the ship, and at 7:21:00 dropped her manila landing ropes to the ground. It was raining almost imperceptibly, and while the light of the sinking sun was dimmed by the overcast cloud condition, the weather was definitely improving.

On board, all members of the crew were at their stations, eager to land and reservice their proud ship and be off again on schedule eastward over the Atlantic. In the passageways near the gangway, the passengers' baggage had been assembled ready to be passed out immediately upon reaching the ground. In the spacious lounge rooms near the open observation windows, most of the passengers were on the starboard side with their passports and papers ready for examination there by the boarding officials. Nearly all of them were eagerly looking for friends on the ground or watching the landing operation.

The ground crew at once grabbed the ship's landing lines, connected them to corresponding ground lines and began the operation of hauling them taut as the first step in the landing maneuver. From the very nose of the ship, the steel mooring cable by which the ship was to be pulled in to its connection on the mooring mast began to make its

appearance. Following the passage of the thunderstorm, the wind had become light and variable, scarcely two miles-per-hour velocity on the surface and only some six knots at the ship's altitude; the direction there was some ninety degrees different from that on the surface. Before the slack of the landing ropes could be taken in by the ground crew, a light gust from the port side caused the ship to move very very slowly to starboard and also gradually tightened the port manila landing rope.

At 7:25 P.M., or just four minutes after the landing ropes had been dropped, I saw a burst of flame on top of the ship just forward of where the upper vertical fin attaches to the hull. It was a brilliant burst of flame resembling a flower opening rapidly into bloom. I knew at once that the ship was doomed, for nothing could prevent that flame from spreading to the entire volume of hydrogen with which she was inflated. There was a muffled report and the flames spread rapidly through the after-quarter of the ship. In the control room, the officers were not aware that anything was wrong until they felt a shudder through the ship that reminded them of the snapping of a landing rope, but a quick glance assured them that it was something else. As the stern section of the ship lost its buoyancy in the fire, it began to settle to the ground on an almost even keel, ablaze throughout and sending huge pillars of flame and smoke to great heights.

As the stern settled, the forward three-quarters of the ship, still keeping its buoyancy, pointed skyward at an angle of about forty-five degrees. Through the axial corridor of the ship, in reality a huge vent extending along the very central axis, the flame shot upward and forward as though it were going up a stack. The travel of the flame was actually progressive, but it spread forward so rapidly and it so quickly encompassed the entire length of the ship that to some it may have seemed almost instantaneous. The forward section was not long in following the stern to the ground, and within less than a minute from the first

appearance of the fire, the ship had settled, not crashed, to the ground and lay there writhing and crackling from the hottest flame that man knows.

The feelings of those on the ground are difficult to describe. Visitors who stood in the assigned visiting space several hundred yards away were stricken dumb or fled in horror. In order not to be caught under the burning ship, the ground crew were ordered to run from the immediate vicinity. But even before the ship had touched the ground, they had dashed back to effect such rescues as might be possible.

In the ground crew were many men who were acquainted with many of those on board the ship and were also familiar with the parts where passengers and crew were located. To such places they went immediately. On board the ship there was little time for warning or help. Some were surprised in their cabins or at their posts of duty and never knew what overtook them. Others heard shouts from within and from without the ship to jump through the windows, and many of the survivors got out by this method.

At first glance, it seemed impossible that human beings could come out alive from such an inferno. As I stood off to one side, spellbound by this most unexpected tragedy, I saw the flames eat rapidly along the fabric sides of the hull, greedily devouring the illustrious name *Hindenburg* letter by letter.

It is unfortunate that most of the passengers were gathered on the starboard side and that they and perhaps others on board did not realize that the wind on the surface was blowing directly onto the port beam and hence was driving the flames to starboard. Realization of this fact might have saved a few more lives. I was startled to see Chief Steward Kubis, Watch Officers Ziegler and Zable, and several others, suddenly emerge from the burning mass of wreckage totally unharmed.

There were of course some miraculous escapes, not all of

which will ever be recorded. One of the elderly women passengers, as though led by a guardian angel, left the ship by the regular hatchway with the calmness of a somnambulist, receiving only minor burns. Others, hearing the call to jump, went through the open windows and were led to safety.

Probably the most miraculous escape was that of Werner Franz, a fourteen-year-old cabin boy. As he jumped through a hatch in the bottom of the ship and reached the ground, the searing flames began to choke him. Just at that moment, a water tank opened up immediately above him, discharging its entire contents upon him and bringing him to his senses. He spied an opening in the wreckage free from flames, worked his way through it and emerged into the open air from this fiery furnace totally unharmed and thoroughly drenched.

Those in the control room, as had every member of the crew, stuck to their posts in accordance with the highest traditions. As the forward section of the ship settled to the ground, it rebounded slightly from the resiliency of the forward landing wheel. Then and only then came the word "Now everybody out." There had been plenty of quick thinking in the control car during those seconds of descent. The normal impulse would have been to drop water ballast to ease the impact of the ship with the ground, but those in the control car in an instant decided not to drop it but to let the weight of that water remain in the ship as long as possible to bring the burning hull to the ground in the shortest space of time.

Captain Pruss was badly burned, but not so badly as Captain Lehmann who nevertheless was able to stagger away from the ship. Largely because there were many tons of fuel oil still on board, the fire raged for more than three hours despite the efforts of all available fire-fighting apparatus. Thirteen out of thirty-six passengers perished or died subsequently from injuries; of the sixty-one crew members, twenty-two fell victims to this awful fire and

one civilian member of the ground crew died of burns. To anyone having seen the tragedy, it seems remarkable indeed that out of ninety-seven persons on board, sixty-two survived.

It is almost impossible to recount the many deeds of heroism performed in the emergency by members of the armed services and civilians alike. The period immediately following the settling of the ship to the ground was one of individual initiative; no orders had to be given. We shall probably never know all of the individual deeds within the ship itself, particularly on the part of those who perished. One event, however, cannot pass without mention. On board the ship returning from a visit abroad were Mr. and Mrs. John Pannes, he having been for many years an official of the Hamburg American-North German Lloyd Steamship interests in New York City. As the ship neared the ground, someone shouted to Pannes to jump through the open window; but glancing about for Mrs. Pannes to go with him, he did not find her and would not go without her; both perished within the ship.

Requests for medical assistance had gone out quickly from the Air Station since our own dispensary, of limited size and facilities, could hardly cope fully with the unanticipated volume thus thrust upon it. Quickly doctors and ambulances came from every direction. Fire-fighting departments, American Legionnaires, Sea Scouts, members of the C.C.C., soldiers, sailors, members of the civilian ground crew, all pitched in despite great danger to themselves in effecting rescues, in attempts to subdue the blaze, in caring for survivors and those who had perished.

There has been and will continue to be many a conjecture as to what caused the *Hindenburg* disaster. However, this much must be definitely recognized. The ship arrived in perfectly normal condition, made a skillful and normal approach, and was being landed in an entirely normal way. In my opinion, there was nothing wrong within the ship until the fire broke out. In other words, the *Hinden-*

burg was not lost as a result of any weakness or defect in the airship as a type but, as in the case of many steamers, airplanes and other instruments of transportation, fell prey (through its own hydrogen) to fire and fire alone. Had the *Hindenburg* been inflated with helium, no such disaster could possibly have occurred.

The morning following the accident I went to see my friend Ernst Lehmann as he lay in the hospital, not suffering particularly, though badly burned. We had a rather extended conversation and then, to permit him to conserve his strength, I departed, intending to return in the afternoon as the medical pronouncements were that his chances for surviving were at least even. But his injuries were worse than had been diagnosed. In what therefore turned out to be practically his last conversation on the subject, I discussed with him the future of airships. Although completely baffled over the possibility of any natural phenomena having caused the loss of the *Hindenburg*, Lehmann told me of his still-firm conviction that the airship would go on.

And so I, too, am convinced that the *Hindenburg* disaster is not by any means the last chapter in the story of lighter-than-air craft; it is, rather, a turning point. It is deplorable that it should have taken the tragic loss of thirty-six lives to make an apathetic world "airship conscious" and "helium conscious," but this it did. From knowledge of its existence previously confined mainly to students, helium became a byword with all who are interested in the realm of aeronautics.

And so the sacrifice of those who gave their lives in the *Hindenburg* has indeed not been wholly in vain.

Hurricane in New England

NEW ENGLAND, September 21, 1938—Year in, year out across the northern United States, great areas of high and low pressure, each several hundred miles in diameter, roll like atmospheric groundswells—the lows bringing overcast and rainy weather, the highs fair skies. Compared to this relatively placid atmospheric topography, the antics of West Indies weather are fantastic. In that tropical neighborhood, pits of low pressure suddenly take form, airy abysses miles deep into which winds from the high-pressure areas rush from all sides not at thirty, forty, fifty miles per hour but at seventy-five, 100, even 200 miles per hour. Such an abyss formed in September, 1938, northeast of Puerto Rico.

Like others of its kind this pit did not remain stationary. Usually they move northwestward till they strike the coast of Florida or the Gulf, then turn northeastward, out over the Atlantic. The 1938 pit started on this route, swerved northward before it reached the coast of Florida. Off Cape Hatteras it appeared to swing northeastward but its path was blocked because an unusually broad high-pressure plateau covered nearly the whole north Atlantic. Following the course of least resistance, the pit swept northward into a low-pressure trough—across Long Island, through the heart of New England, into Canada, finally vanishing north of Montreal.

That was all, but for one day it made a cataclysm in the barometric topography of the U. S. New England sud-

Courtesy of Time, copyright Time, Inc., 1938.

denly found itself at the bottom of an atmospheric abyss between two great plateaus. The effect would hardly have been much more catastrophic had a new Grand Canyon of the Colorado suddenly opened in the Connecticut Valley.

At 2:45 P.M. on September 21, the storm reached Long Island. More destructive hurricanes have bombarded United States shores, but never has a hurricane struck a region so thickly populated and so unprepared. Inattentive to weather reports, many a landsman had his first intimation that the wind and rain were more than an equinoctial storm when he had a "funny feeling" in his ears—the effect of sudden low pressure, like that of going up in an elevator.

The shrieking vortex of the storm first hit Long Island between Babylon and Patchogue where the barometer reached an all-time low for that area, 27.95 inches. At summer resorts on the long strip of sand dunes separating the ocean from Great South, Moriches and Shinnecock bays, the hurricane swept away everything not securely anchored, including eleven wind-measuring instruments. Following the first fierce blow came tidal waves, several in succession, to heights of thirty or forty feet. Bath houses, boat houses, summer cottages, Coast Guard stations, long rows of squat and sturdy stores were swept away, hammered into high windrows of kindling wood or carried over whole to toss on the raging bay waters. Of 150 buildings in West Hampton Beach, six were left standing. In the bays, even in village streets on the mainland, drowning people screamed and struggled.

In swank Southampton to the east, ranks of expensive cabañas were devoured by the sea, mansions along the dunes buffeted and flooded by titanic waves. Streets, lined with ancient elms that were Southampton's pride, looked like the Argonne of 1918. East Hampton, still further east, and Amagansett were in worse case. More than four in every ten of their stately elms crashed. The sea rushed

up and over the dunes to lash even at the Maidstone Country Club on its high bluff, obliterating the golf course and fifty prize flower gardens. Rich summer colonists and poor fisher folks suffered alike. Falling trees crushed the Maidstone Hotel. The Bridgehampton freight station was shunted smack across the tracks.

Out toward naked Montauk Point, the 190-foot Mackay Radio tower at Napeague was flung to earth. Fishing craft were splintered, fishermen's shacks blown to flinders. Refugees huddled marooned in the brick-walled Montauk Manor on high ground. On Long Island's northerly finger, the hurricane from the South made shambles of the shipyards of Greenport, unroofed a full movie theater.

On the other side of the vortex, at Long Island's western end, the violence came from the north and northwest. From Huntington to Manhasset Bay on the north shore, the Long Island Sound waterfront was smashed in. On the south shore, buildings at Jones Beach were blown toward the sea instead of back into the bays. Torrential floods halted traffic and, like most of the Suffolk County to the east, 95 per cent of Nassau County (population 303,000) was in darkness. Brooklyn and New York City, catching the fringe of winds which registered 120 miles per hour in some gusts, were flooded and stalled. Lights went out for an hour, subways halted, when the Hellgate powerhouse was flooded by storm tide. The Staten Island ferryboat *Knickerbocker* was caught by the wind in her slip, jammed into an iron bumper rail at an angle that drove her 200 passengers near to panic before two tugs managed to work her loose.

Whistling and whining across Long Island Sound, the big wind hit New England with increased fury. (Harvard Observatory at Blue Hill, Massachusetts, registered gusts of 186 miles per hour.) At Bridgeport, New Haven and New London, the storm waves hurled shipping into the streets and across railroad tracks. The crack *Bostonian* express train had to nose a house out of its way as it crawled, half-

submerged, to safety, dragging telephone poles by their fallen wires, leaving all but one car behind in a washout. A capsized naval training ship started a fire in New London that consumed an entire city block. Mrs. Helen E. Lewis, Republican nominee for Connecticut Secretary of State, was drowned with her husband when their island cottage at Stony Creek was swept away.

At Watch Hill, Westerly and Charlestown, Rhode Island, loss of life was heavy. Scores of people who took refuge in the highest dunes were swept away by mountainous seas which carved a new coastline. Well Rock lighthouse at Point Judith was hammered down. So was Prudence Island lighthouse, killing the tender's wife and son. Charlestown was wiped out. Seven school children were drowned in a bus on Jamestown Island.

The rich colony at Newport suffered worse than their friends at Southampton. Bailey's Beach, Ocean Drive and the Clambake Club were demolished. Mrs. Harry Payne Whitney's sculpture studio was torn off its cliff. Mrs. Jock Whitney's aunt, Mrs. John C. Norris, and her son were drowned in their car as they tried to motor from Narragansett Pier. In a house at Misquamicut, ten women holding a church social were drowned.

Raging up Narragansett Bay, wind and water struck Providence, short-circuiting all power. A 300,000-cubic-foot gas tank exploded. Short-circuited auto horns set up a doleful din. Towns up Buzzard's Bay and along the Cape Cod Canal were devastated. A steeple in East Bridgewater fell point first through the roof of its own church. At Northfield Seminary a falling chimney killed two girls, injured twenty. "Old Ironsides," torn from her moorings in Boston Navy Yard, was badly battered.

As the storm raced inland, veering northwest toward Montreal, it flattened crops and orchards, wrenched away miles of wires, acres of signboards. It blew away the famed Jacob's Ladder trestle on Mount Washington. Dumping trillions of tons of rain on New England, the hurricane

swelled rivers already swollen by three days of ordinary rain. Highways and railroads were washed out. In the Connecticut Valley, cities marshaled sandbag brigades. Hartford held its breath while the dike by the Colt Arms factory held through a flood stage of 36.45 feet. In the Thames Valley, Norwich, Connecticut, isolated, was supplied with food and medicine by airplane.

As the devastated East picked itself up, dried itself off, began burying its dead, Harry Hopkins flew to join the six New England governors in Boston. To \$500,000 from the Red Cross he added the promise of "unlimited funds" and 100,000 workers from W.P.A. Disaster Loan Corporation (subsidiary of R.F.C.) offered rehabilitation loans. After five days, some communities were still isolated, train service had not been restored on the full New York-to-Boston run, the known dead had passed 600, the estimated damage half a billion dollars.

At West Hampton, Long Island, Arni Benedictson, Norwegian butler of Mr. and Mrs. William Ottman Jr., proved to be an Admirable Crichton straight out of Sir James Barrie's play. With meticulous calm he saved twenty-three people by shepherding them, including the Countess de Fontnouvelle (wife of the French consul-general) and her infant, into the Ottman house, signaling for help from the roof with a bed sheet. At the storm's height he reported to the house guests: "I am sure that our signal was observed, but the situation is most disturbing and perhaps I should venture outside and bring help from the mainland." He then fought his way through the storm to find three stout lads who helped him lead his little band to safety over a breaking bridge.

Forty Fathoms Down

PORTSMOUTH, N.H., May 23, 1939—At 6.30 A.M. May 23, 1939, the sleek, black submarine *Squalus*, commissioned March 1 as the newest Navy "tin fish," churned east from the Portsmouth, New Hampshire, Navy Yard on orders to practice shallow "crash"—high-speed plunge—dives. At 7:40 a radiogram crackled back to the yard: "Preparing to descend for one hour." At 10:20 the yard attempted to contact the *Squalus* again. There was no answer. Within ten minutes her sister ship, the *Sculpin*, was sent to look for the missing sub.

Eight miles out, the *Sculpin* slid past the seven reefs of the Isle of Shoals through a calm, sun-freckled sea. No sign. Five miles further—"Red smudge, sir!" A moment later the lookout spied a yellow telephone buoy such as is released by submarines in case of emergency, and shouted below.

The voice of the *Squalus*' commander, Lt. Oliver Naquin, sounded hollow: "High induction valve open . . . depth 240 feet . . . compartments flooded." The waves jerked the *Sculpin* aside, and the telephone cable parted. It was 12:40 P.M.

Alfred G. Prien, machinist's mate, second class, had stood in the control room of the *Squalus* as the ship prepared to dive fifty feet in a time test. Before him were the red and green lights of the "Christmas tree"—the instrument board, nerve center of the ship.

The "rig for diving" lights flashed and the engines

Condensed from Newsweek.

stopped. A siren wailed. Prien pulled the valves shut and checked the lights. The ship began to sink . . . twenty . . . forty . . . fifty feet. At that point, just enough to cover the periscope, the ship leveled off. Immediately a frantic message came from the engine room: "Water coming in!"

Prien's eardrums felt tight. He rechecked his lights; all were correct. "Blow the ballast and ascend!" Prien jerked the levers at the order and the ship's bow shot upward at a forty-five-degree angle. He grabbed the handle of a manifold valve to stay erect, still staring at the glowing instrument board. Suddenly the lights went out—the submarine began to sink, dragged down by the tons of water in the aft compartments.

Lloyd Maness, electrician's mate, was standing at the bulkhead door between the control room and the aft sections. He felt the ship angle toward the bottom and saw water roaring into the stern. Instinctively, he started to close the bulkhead door, then heard a frenzied shout: "For God's sake, keep it open!"

He swung it wide again and five men tumbled through, water surging after them. By what his mates described as a "superhuman effort," Maness shouldered the door shut and "dogged it down." Behind, doomed, were twenty-six other men—among them his buddy, Sherman Shirley, at whose wedding he was to have been best man the following Sunday.

Forty fathoms above the fifty-nine entombed officers and men, a small fleet of rescue vessels was assembling. Among them was the veteran submarine tender, *Falcon*. All night, preparations went ahead—conditions below were "satisfactory, but cold" (thirty-six degrees above).

At 9:22 next morning the first diver managed to land on the deck of the sunken submarine, "a piece of incredible luck." An hour and a half later, the squat ten-ton diving bell invented by Navy men for just such disasters was lowered overside, guided through the cold, murky water by shifts of divers.

Like a huge gray spider it descended to the *Squalus* by means of a cable attached to a hook beside the submarine's forward escape hatch. It settled there, held by the 105-pound-per-square-inch pressure of the depths and by the clamps divers had attached; the bell crew jumped out of the water below the hatch, yanked up the sub hatch, and began taking in stupefied, blanket-draped men. Thirty-three survivors—in four loads of seven, nine, nine, and eight men—went up. On the last trip, the bell's cable tangled 150 feet down and, after four hours, divers finally cleared it away.

Next day the bell went down again, this time squatting over the rear escape hatch. The rescuers pried it open, but black water, sloshing over the coaming, filled it to the top. Sadly the Navy abandoned hope for the missing twenty-six and set about making plans to raise the \$4,000,000 *Squalus* and hold an official court of inquiry.

While the Navy was mobilizing its forces on behalf of the sunken sub, the press, too, had gone into action. Within an hour after the first flash that the *Squalus* had gone down, fifty reporters were at Portsmouth Navy Yard, while at sea photographers in chartered planes were snapping away at the smoke bomb marking the sunken sub's location.

Some New York reporters were in Boston-bound air liners; others rushed to the Navy Yard in Brooklyn. After a slight delay in orders from Washington, the commander of the cruiser *Brooklyn* was authorized to take them aboard, and the ship left Portsmouth at 5:40. By the following day, 300 reporters and photographers were on the scene.

Before dawn the day after the disaster, E. Harry Crockett of the Associated Press Boston bureau shoved off for the rescue zone in a chartered thirty-foot lobster boat. According to the press service, Crockett and three staff men from Boston A.P. newspapers fought their way through rough seas to a Navy vessel anchored over the

Squalus. "How many are dead down below?" shouted Crockett to a "responsible officer." "Twenty-six" was the reply. With the most notable beat of the disaster in hand, the party returned ashore. There Crockett, seasick and with a hand cut to the bone on a lobsterman's hook, telephoned his story to his service.

Navy officials in Portsmouth and Washington denied Crockett's report had any basis, but they had to back down some hours later when the first seven survivors brought from the sunken sub reported twenty-seven dead—a figure that later was corrected to the twenty-six in the original Associated Press dispatch.

To raise the sunken sub and get evidence for the "inquest," two Navy experts, Comdr. Allen McCann—who helped perfect the diving bell used in the rescue—and A. I. McKee decided that the "quickest and safest" way to raise the water-logged vessel was to pump out the flooded after sections and attach pontoons to the hulk to give it additional buoyancy and float it to the top.

At the four-day Naval inquiry in Portsmouth, the solemn-faced board heard a stream of survivor witnesses, among them Lt. Naquin, commander of the *Squalus*. He declared that apparatus to "insure" that an undersea craft would not submerge until its ventilation valves were sealed "would have prevented this tragedy."

Asserting that a depth-bomb explosion could rupture the whole ventilation system of a sub, Naquin asked for "automatic, instantaneous, snap-action" closing equipment to stave off future disasters.

Nevertheless, in comparison with the futile attempts to rescue the men on the S-51 in 1925 and those on the S-4 in 1927, the sixty-hour *Squalus* rescue at record depths was a miracle of speed and efficiency. But luck and fair weather admittedly were with the workers. And though the incident proved that rescue equipment was vastly superior to that of ten years before, it also revealed that many problems still remained to be solved.

Many a landlubber wondered, for example, why the Navy had only five of the McCann diving bells in commission; had the *Squalus* gone down in a less-favorable position than just outside Portsmouth, all these bells might have been beyond call. As it was, the one used had to be shipped from New London, Connecticut.

When at last the sunken *Squalus* was brought to the surface, after 113 days of back-breaking, heart-searing work that twice saw the giant submersible break the surface, only to sink again, the Navy salvage crew dragged the pontoon-buoyed steel carcass into Portsmouth dry-dock. Hospital aides removed the bodies of the dead and reported one missing—that of Robert P. Thompson, the cook, probably swept through a hatch during salvage operations. An official board of inquiry, meeting in the dank interior, saw the two main air-induction valves tested. One failed to close—just as Lt. Naquin contended it had failed on the fatal plunge.

Boston's Trial by Fire

By Ben Kartman

BOSTON, MASS., November 28, 1942—There was a war on. That was plain to see from the many men in uniform in the Cocoanut Grove, Boston's oldest night club, the night of November 28, 1942. But for many days afterward, the war was temporarily—and understandably—forgotten. For Boston had a headline story of its own.

Seldom had the Cocoanut Grove been so crowded. Every available table was taken as some 800 guests waited for the floor show to begin. It was a gala Saturday night. Many in the crowd were celebrating the big Boston College-Holy Cross football game of the same afternoon. Holy Cross had won, but downtown Boston was full of men and women looking for an outlet for their unexpended energies. And where could they find a better place than the Cocoanut Grove?

Crowds stood around the dimly lighted Melody Lounge downstairs; crowds filled the tables around the upstairs dance floor. There were soldiers and sailors, some of them being given a sendoff to Army camps and Naval training stations. There was a wedding party, and there were the usual night-club devotees who need no special excuse for an evening of fun.

In the Melody Lounge, a pianist on a raised platform in the center of the oval bar was banging out jazz tunes. And in the main dining room upstairs, dancers kept time to the music of Mickey Alpert and his orchestra. Shortly after ten o'clock, the dance floor was cleared and Bill Payne mounted the bandstand to lead the crowd in singing *The*

Star-Spangled Banner, a signal that the floor show was about to start. But just as Alpert raised his baton, a girl rushed across the floor screaming "Fire!"

The girl's scream and her flaming hair precipitated a panic. The guests scrambled for the only exit they knew—the revolving door. By now huge tongues of flame were licking at the imitation palm trees and the garish decorations on the walls. Smoke swirled through the hallways and blazing draperies fell, setting fire to flimsy evening gowns and hair. In the mad stampede, men and women were hurled under tables and trampled to death. Others fell over one another and blocked the six-foot-wide stairway leading up from the downstairs bar. Those behind swarmed over them to pile up in layers—easy victims for the smoke and fire. Not far from the revolving door was another door, but it was locked tight.

A girl named Joyce Spector had been worried about her new fur coat, so she started for the check room to make sure it was safe. Before she got there the night club had been turned into a shambles. Knocked down and crawling on her hands and knees, she was somehow pushed through a doorway into the street.

Singer Bill Payne kept his head. Because he did, twenty were saved when he led them through the basement to a cellar exit. Marshal Cook, a chorus boy, led thirty-five other performers and Cocoanut Grove employees through a second-story dressing room to an adjoining roof where they climbed down a ladder and dropped to the ground. Chorus girls, still wearing their scanty costumes, jumped from windows into the arms of bystanders. A few men and women managed to crawl through windows to safety. Others escaped by knocking out a glass-brick wall. But most of them were trapped in the frightful holocaust.

The fire was quickly brought under control, but not soon enough to save the lives of 498 of the Cocoanut Grove's guests. Among the dead was Buck Jones, veteran star of Western films. Two hundred others were in hos-

pitals, many of them severely burned. Of the 800-odd celebrants in the night club, only 100 escaped unhurt. The disaster was the worst of its kind in the United States since 575 persons died in Chicago's Iroquois Theater fire of 1903.

For six hours after the fire was put out, charred and broken bodies were transported to improvised morgues, hospitals and first-aid stations, including a garage where doctors and nurses tried to save those who were still alive. The others were covered with newspapers and taken to a temporary morgue in a near-by store. But there were more bodies than the morgue could hold; some were laid out on the streets and sidewalks amid the fire hoses.

Every available ambulance in Boston and others from near-by communities, the Charlestown Navy Yard and the Chelsea Naval Hospital were pressed into service, but they were inadequate for the long rows of wounded. Private cars, trucks, taxicabs and even a moving van were commandeered to carry the horrible loads of dead and injured. Hospitals were swamped, with bodies piling up in lobbies while doctors and nurses ministered to those who still lived.

Responsibility for the fire was placed on a sixteen-year-old bus boy who struck a match while changing a light bulb, accidentally touching off an imitation palm tree. But the bus boy was not to blame for the Cocoanut Grove's inflammable decorations or for its lack of fireproof fixtures, sprinkler systems and exit markers. The club had been inspected only two weeks before by the Boston fire department.

In the first two days after the disastrous blaze, the offices of the Boston Committee on Public Safety received 2,452 inquiries about 1,045 individuals who might have been in the Cocoanut Grove that Saturday night. There was the sailor in uniform who was looking for his pal. "Bill and I were going to the Cocoanut Grove and we agreed to meet in the front of the Met," he explained. "I waited three hours and a half but he didn't show up. Now

I don't know if he could have gone there without me. I haven't seen him all day and we're due back on board ship tomorrow morning."

Outside the grilled window of a mortuary a blond young man clutched a scrap of paper. It bore the address of the morgue, which a social worker had given him. The young man explained that he had gone to the afternoon football game with his wife, his sister and his sister's boy friend. After the game they had separated, he and his wife to go to the theater, his sister and her friend to go night-clubbing. They had arranged to meet after the theater at the Motor Mart where his car was parked.

The first thing he and his wife saw when they came out of the theater were the glaring newspaper headlines. All night and Sunday morning they had tried to trace his sister. He described her, told what she was wearing Saturday night. A morgue attendant took him downstairs. There his search for his sister ended. She was one of the Cocoanut Grove victims.

By Monday morning offers of help started pouring in on the Red Cross and the city of Boston. From as far away as Chicago, Florida, California, came letters, phone calls and telegrams offering money, blood and skin for grafting. Homes for children orphaned by the disaster were offered by more than 100 couples throughout the U. S.

From the Cocoanut Grove holocaust, physicians learned several valuable lessons. Injections of blood plasma, a technique unknown only four years earlier, saved at least 150 victims of shock. More than 1,300 units of plasma were administered—the equivalent of 1,300 blood donations. At Boston City Hospital, where sixty-three per cent of the victims were taken, ten units per patient were used, giving victims more blood fluid than they had before the fire.

Not one patient who lived long enough for treatment died of external burns alone. Most of the deaths in hospitals were attributed to damaged lungs or throat, the result of inhaling flame or hot gases.

For third-degree burn victims, who needed skin grafts, penicillin was used. The magic drug was then still in an experimental stage, but hospital officials voiced high praise for its effects.

Witnesses at the fire reported that the screams from inside the night club had stopped suddenly, as if all inside had lost consciousness at the same time. Some of the badly burned victims themselves had no recollection of pain. From this physicians concluded that they might have been anesthetized by inhaling some gas. Their deduction was given support by autopsies upon the lungs of the dead, which showed effects similar to poisoning by carbon monoxide, nitrous oxide and phosgene.

Thus, the sufferings of both the living and the dead contributed to the future safety of millions of more-fortunate fellow Americans. And strict fire inspections and rigid safety regulations instituted throughout the nation gave some assurance that the Cocoanut Grove disaster would not soon be repeated elsewhere.

Jinx Year for America's Railroads

By Peter Ross

The year 1943 will not soon be forgotten by America's railroads. Suffering from a wartime manpower shortage, operating with inadequate equipment—much of it in disrepair—the railroads nevertheless were carrying an unprecedented load of passengers and freight. Under such conditions, wrecks were inevitable; and wrecks there were, clear across the nation.

In the first six months of 1943, the Interstate Commerce Commission reported, train accidents were up thirty-two per cent over the same period of 1942, reaching a new high of 8,209! Those due to breakdown of equipment were up thirty-nine per cent; those caused by improper maintenance were up forty-seven per cent. While praising the railroads for the job they had done, the I.C.C. warned that many of the accidents could have been avoided "if the urge to keep trains moving were not permitted to take precedence over safety."

But despite the sharp increase in the number of wrecks, for a time luck was with the railroads; there was little loss of life in most of the accidents. But their luck was bound to give out sooner or later. It gave out, with disastrous results, on September 6—Labor Day—when the Pennsylvania Railroad's crack *Congressional Limited*, thirteen-and-a-half-hour train from Washington to New York, cracked apart in Philadelphia in one of the most spectacular railroad wrecks in U. S. history.

It gave out again on December 16, when the Atlantic Coast Line's northbound *Tamiami Champion* plowed into

the derailed southbound *Tamiami Champion* near the whistle-stop of Buies, North Carolina. In both wrecks, 152 people were killed and more than 300 injured. The death toll of 1943's train accidents was no longer trivial.

The *Congressional Limited* came to grief while the train was thundering through the Philadelphia suburbs en route from Washington to New York. As a journal (wheel bearing) at the seventh car gave out, the train lurched, shuddered and snapped in two. Then came the frightening crash. The seventh coach dropped to the road bed and rolled over against a signal tower. The coaches behind it left the rails and piled up against the wreckage.

While the signal tower sprayed its high-voltage wires among them, rescue workers plunged into the task of pulling out the living, piling up the dead. Police, air-raid wardens, civilian-defense workers, and hundreds of Philadelphians swarmed to the scene. Some 200 servicemen aboard the train in cars that were not smashed spread out over the four blocks dotted with victims of the crash.

The dead were taken to an improvised morgue in the basement of near-by Frankford Hospital, while doctors and nurses worked over the injured upstairs. Soon the hospital had more patients than it could handle. The rest were taken by ambulance to other hospitals and to Philadelphia's Navy Yard.

Christina Nix of Long Island, New York, was pinned in the wreckage for five hours before she was cut loose from the twisted steel with acetylene torches. Pluckily, she repeated over and over: "Thank God I'm Irish." She died the next morning.

Morris Borden rushed from Brooklyn to identify the bodies of his wife and two children. Next day he turned on the gas in his kitchen and died.

The wreck of the *Congressional Limited* might have been averted if the railroad had made use of two-way radio communication. Shortly before the crash, smoke and flames were seen issuing from the train's journal box. The

engineer of a switch engine yelled a warning to a yard clerk, who called the next signal tower by phone. But the *Congressional Limited* passed under the tower before the signalman there could flag it down.

Commenting on the wreck, the editor of *FM Radio-Electronics* wrote:

"For all its electrification of the New York-to-Washington route, the Pennsylvania Railroad still relied on (communications) methods which, judged by radio engineers, are as awkward, inadequate, and antique as the old gas lamps which trainmen used to turn on and light by a key and a wax taper mounted on a wooden stick."

Even more fantastic than the wreck of the *Congressional Limited* was the collision of the two *Tamiami Champions* in North Carolina a scant three and a half months later. The West Coast *Champion*, Florida-bound, was derailed on a bitter-cold night just after a sleet storm had ended. The last three cars hung at a 45-degree angle over the northbound track. Some of the more hardy passengers left the train and climbed up the sleet-encrusted embankments; others remained in their cars. Suddenly two southbound freight trains stopped, just in time, behind the wreck.

Thirty-five minutes after the accident, passengers on the embankments heard the sound of an approaching train. It was the East Coast *Tamiami Champion*, roaring up the northbound track at 90 miles an hour, headed straight for the derailed cars. There was a frightful screech, then a sickening crash, followed by the cries of the injured and dying.

An expectant mother who waited for hours to be rescued kept moaning: "I won't lose my baby. I won't lose my baby. God help me, I won't!" A doctor rushed to her side, gave her a sedative and told her the baby would be born, though the woman's legs and thighs were horribly mangled. "Thank God," she said.

Everywhere rescuers found crushed, decapitated and legless bodies. Among the seventy-two dead were fifty-

two servicemen, most of whom were homeward bound for Christmas. The injured totaled almost 200.

Why had no warning torpedoes been placed on the northbound track? Nobody seemed to know. The railroad explained that the West Coast *Champion's* fireman had gone down the track to set a flare, but he had stumbled, breaking his one and only fusee. Passengers then set fire to newspapers in a frantic, futile effort to warn the onrushing train. Frank Belknap, sixty-seven and a veteran engineer, later said he had seen no warning signals until it was too late. His locomotive and first eight cars plunged into the three derailed cars of the southbound train.

Two-way radio was suggested by Orestes H. Caldwell, former Federal Radio Commissioner, as a simple cure for railroad collisions like those of the *Congressional Limited* and the *Tamiami Champions*. Caldwell pointed out that U. S. railroads had made almost no use of electronics but still relied on "the archaic practice of sending a brakeman up the track with lantern or flag."

The appalling death toll of 1943's train disasters from coast to coast bore out the wisdom of his suggestion.

Matinee of Death

By Edwin Affron

HARTFORD, CONN., July 6, 1944——It was hot and sunny in Hartford, Connecticut, that afternoon in July, 1944. At the circus grounds on the outskirts of town, some 7,000 men, women and children—happily oblivious of any danger—were enjoying “the greatest show on earth.” About a half hour after the matinee started, 163 of them were dead: six more died later of injuries. More than a third of the victims were children under fifteen.

In just ten minutes, a “flash fire” had written a tragic last act to the Ringling Brothers-Barnum & Bailey show.

Most of the fatalities were due to severe burns as the blazing tent fell on the crowd, igniting flimsy summer clothing. Some of the victims were crushed to death by the panic-stricken mob trying to escape the rapidly spreading inferno. Hundreds dropped to the ground from the back of the high bleacher seats, to escape from under the sides of the tent. Many more managed to get to the main entrance before the flames did. But for those in the front rows, the arena itself offered the only hope of escape. Reserved-seat occupants threw their folding chairs in front of them to clear the way, only to fall and pile up over them later. Children were torn from their parents; frantic mothers tried to fight their way back against the awful tide of humanity maddened by fear. A grandmother was knocked to the ground, and her young grandson lay over her in a vain effort to guard her against injury.

By now the whole great canvas tent was in flames, and

the heat was unbearable. In this inferno, the runways proved a barrier few could cross. Some tried to hurdle them and, falling, dropped back to build a human pyre—a trap for those behind them. Those still in the tent might somehow yet have escaped had not chunks of burning canvas fallen on them as the six giant center poles collapsed one by one.

Throughout the night that followed the horrible matinee of death, the dead were taken to the state armory where they were laid out on cots to await identification. And Hartford hospitals were swamped as the injured started arriving.

No one knew for sure how the fire started. The traditional second act—the wild-animal turn—had just ended. Trainers in the steel cages were prodding their charges toward the steel-mesh runways that fanned out from the rings of the circus. Merle Evans, the bandmaster and a circus veteran of twenty-six years, suddenly noticed a small spot of fire near the top of the big tent. He struck up the "disaster march": unscheduled music that told performers and attendants to get to their posts.

At the first notes of "The Stars and Stripes Forever," the alerted trainers drove their lions and tigers desperately through the runways. They knew that tragedy impended—and they knew that the tragedy would be increased manifold if the animals were not in their cages.

One theory attributed the fire to a short circuit. Another held that it began on or near the ground at the outside canvas, about twenty feet from the main exit. The grass was dry from the heat and dust common to circus grounds, and might easily have been ignited by a match or cigarette. But some grass within a few feet of the fire area did not appear to be burned, although trees fifty to sixty feet from the fire showed scorched foliage.

When first noticed, the flames were already five or six feet high. As the fire spread rapidly, hitting the edge of the top canvas, the flames were about two feet wide at the

point of contact. A gust of wind from the southwest then drove the fire across the underside of the tent, and almost instantly the entire canvas was enveloped in flames.

At first the crowd viewed the fire incredulously; some thought it part of the show, or were confident that it would be quickly controlled. The delay in trying to escape, though only momentary, proved fatal to many who a few seconds later were part of a panic-stricken mob.

As the people ran down the aisle toward the eastern end of the tent, they piled up against the animal runway at that end. Climbing over the steel cage bars was impossible for women in high-heeled shoes and for small children. Bodies were found piled four deep against this cage obstruction.

Once the fire had started, it made such rapid headway that it was impossible for fire fighters to reach the scene in time to prevent the tragedy. Calls to the fire department were given promptly by three people: an off-duty fireman attending the circus, a police radio car, and a resident of a near-by house. Three box-alarms were sounded almost simultaneously, bringing an immediate response of seven engine and three ladder companies. The nearest fire company was only about a half-mile from the tent.

Why did the fire spread with such frightening speed? For one thing, the practically new canvas of the "big top" had not been flameproofed. Instead, it had been processed against water late in April by the use of paraffin applied with gasoline as a solvent—the time-honored method of waterproofing used by the circus.

At any rate, within ten minutes the canvas was completely consumed, the poles were down, and the fire fighters' chief task was to extinguish the blazing stands and extricate the dead and dying.

Many of those who were brought out badly burned but still alive owed their survival to the grim tragedy of war and to Boston's disastrous Cocanut Grove night-club fire of 1942. Patients streaming into Hartford's Municipal

Hospital with twenty-five to seventy-five per cent of their body surface burned could not have been cared for before the war; enough plasma would not have been available, and without it the mortality rate would have soared tremendously.

Physicians were organized in plasma and operating teams, to start the flow of blood into injured bodies without delay. The more severe cases were rushed to oxygen tents.

One of the major mysteries of the Hartford circus fire was the case of Little Miss 1565, the child victim whom nobody ever claimed. Unlike some of the other unidentified victims, she was not burned beyond recognition; the flames had hardly touched her. Yet no relatives or friends came forth to identify her. A careful check was made with public schools and Sunday schools. Hundreds of telephone calls, radio broadcasts, newspaper stories and advertisements, and circulars carrying a picture of the little girl provided no clue to the identity of the blonde, blue-eyed child.

Perhaps her parents, too, died in the circus fire. But even so, how is it that some neighbor didn't recognize her picture and reveal her name?

Today she lies in the nonsectarian cemetery in Wilson, Connecticut, her grave marked with a tombstone inscribed simply "Little Miss 1565"—the number of her grave marker. Every Memorial Day, Christmas and July 6—the anniversary of the fire that claimed her life—her grave is decorated with a floral wreath. The pitiful story of the little girl nobody knew touched the hearts of hundreds of people throughout the country. Their contributions poured in to the Hartford police department, which is seeing to it that Little Miss 1565 is not forgotten.

New York's Nightmare Disaster

By Earl Mercer

NEW YORK, N.Y., July 28, 1945—It was bound to happen some day. Residents of Manhattan had feared and predicted it for years. Then, like a bad dream come true, it finally happened on the fog-shrouded morning of July 28, 1945. It was New York's most spectacular aerial disaster.

Only a few minutes earlier, an Army B-25 Mitchell Bomber had asked LaGuardia Tower for the weather in Newark, New Jersey. The pilot, Lieutenant Colonel William Franklin Smith, Jr., a West Point graduate and a veteran of two years' combat flying, had flown to Newark two days before from Sioux Falls, South Dakota. A day later he had flown to Bedford, Massachusetts, with Staff Sergeant Christopher S. Domitrovich. At Bedford, Albert Perna, a Navy enlisted man, had joined them for a free ride back to Newark.

The towerman at LaGuardia Field read Smith the Newark weather, warned him that visibility was bad, and advised him to land. Then, almost as if it were an afterthought, he added, "I can't see the Empire State Building from here."

Neither could Lieutenant Colonel Smith. Minutes later, the B-25 tore out of the overcast over New York City, and crashed into the tallest building in the world. The big bomber exploded into great sheets of flame and the thunderous explosion which rocked midtown Manhattan could be heard two miles away.

The plane hit the north side of the 102-story skyscraper

at the seventy-eighth and seventy-ninth floors, ripping an eighteen-by-twenty-foot hole through steel and masonry as if they were papier mâché. Part of the fuselage and one of the plane's twin motors cut across the floor, smashed through seven walls, and came out on the south side of the building. The second motor smashed through the door of an elevator shaft and plunged eighty floors to the sub-basement. A section of the wing landed a block east in Madison Avenue, and other parts of the plane were imbedded in walls of near-by buildings. A mass of broken masonry, metal and glass showered down onto the streets below, landing as far as five blocks away.

For forty minutes flames raged out of control in six floors of the 1,250-foot building. An enormous crowd gathered in the street as the largest aggregation of fire-fighting apparatus ever assembled in New York rushed to the scene of the highest fire in the city's history.

In addition to the three men in the plane, ten others were killed in that cataclysmic collision. Most of them were women and girls employed by the National Catholic Welfare Conference, which has offices on the seventy-ninth floor. Many were burned beyond recognition. And the body of a man who worked on the same floor was found on a ledge seven floors below. He had apparently been blown out a window. Scores of other persons, caught on upper floors, escaped before the fire had made much headway or were rescued as firemen poured tons of water onto the flames.

Only the fact that it was a Saturday morning, when many offices were closed, prevented a far greater catastrophe. On a normal weekday about 15,000 persons would have been at work in the Empire State Building, and another 35,000 would probably have been there on business. But this was a holiday for many—the entire seventy-eighth floor, one of the worst hit, was unoccupied that day.

A hero of the disaster was seventeen-year-old Donald Maloney, a Coast Guard hospital apprentice, who was pass-

ing the building at the moment of the crash. He ran into a drugstore, talked a clerk into giving him hypodermic needles, drugs and other supplies. Then he rushed back to the Empire State Building and gave first aid to many of the injured.

As in all disasters, there were the usual miraculous escapes. Two office girls were giving first aid to an injured woman when a building attache told them he had an elevator ready to take the woman down to street level. The girls started to accompany the injured victim down, but the building attendant advised them to remain and do what they could for others who needed help. The elevator they would have taken plunged seventy-five floors to the subbasement.

James W. Irwin, head of a firm of management consultants with offices on the seventy-fifth floor, was sitting alone at his desk when he heard the plane roaring toward him. He ran into the hall as the roar increased. Just then, the plane struck. When he returned to his office after the blast, all the windows had been blown out and the desk at which he had been sitting was littered with huge fragments of broken glass.

Louis Petley, an observation-tower guide, was on the eighty-sixth floor tower with thirty-five persons who had paid a dollar each for a breath-taking view of Greater New York. Petley was pointing out the sights when the crash came. "I jumped three feet," he said. The sight-seers started rushing around as a flash of flame enveloped the tower. Like a shepherd with his flock, Petley herded them down stairways to the sixty-fifth floor. From there they took an elevator to the street.

Chicagoan Einer Graff was in his seventeenth floor room in the McAlpin Hotel about a half block from the Empire State Building when he heard the impact and a series of explosions. "I ran to the window and looked out," he said. "There was a great crash, like thunder, then lightning-like flashes filled the sky."

Stanley Lomax, radio sports announcer, was driving to work when he heard the roar of the B-25. "I looked up, and knew it would crash," he said. "Its course was straight down Fifth Avenue. I shouted, 'Climb, you damn fool!'

"He pulled up a little, but not enough, and the plane crashed. The left wing catapulted up into the fog and then over toward Madison Avenue, one block west. The plane just hung there for about five minutes. As soon as it struck, with a crash like thunder in a nightmare, the entire floor where it hit burst into the same golden, blinding flames as the plane had done. It was as though someone had thrown a switch.

"The cockpit of the plane was driven so deep into the building that the pilot and his crew must have burned to death within an instant. It was all like a hideous dream, maybe because the fog made it seem unreal. Not more than 100 feet above the plane the fog hugged the tower, and little wisps of it reached down, as though they were trying to cover the tragedy.

"Then the fire department got there. They must have come within two minutes after the crash. Twenty trucks roared down Fifth Avenue. By that time the flames were covering three or four floors, it seemed. The office workers poured out of the building, as many as could escape. I've never seen such frightened people. I knew what they were thinking. I'd thought about it myself plenty of times. 'What if a bomb ever hit the Empire State?' Well, now I know."

Army and city officials wondered afterwards whether Smith had seen the East River through the swirling fog and had mistaken it for the Hudson, between Manhattan and New Jersey. At any rate, he apparently thought it safe to come down to get his bearings.

People in offices from 42nd Street south, and along Fifth Avenue, suddenly heard the roar of the plane's twin motors. Looking up, they saw the B-25 swinging south. One witness later said he thought the pilot tried to bank

away. It was too late. As hundreds watched, horrified, the huge plane struck. The world's tallest building shuddered down through its sub-street depths and a great roar broke from its high-rearing ribs.

Nanette Morrison, a typist in another building, said the plane was so close to her window on the thirty-eighth floor that she could see two members of the crew. "I almost waved to them," she added. "Then I realized they were in trouble. The pilot was obviously trying to climb, but the plane didn't go up except slowly, so slowly it almost drove you mad watching his completely futile efforts.

"It couldn't have been a minute later that I saw it hit the Empire State Building. I heard the terrific explosion and from my window saw a flaming arrow shoot through the plane and then eat up four stories of the building, starting at about the eightieth floor."

Roofs of several near-by buildings were set afire by the spray of blazing gasoline from the plane; a sculptor's penthouse studio on a 12-story building burned, with a loss of \$100,000.

Mayor LaGuardia, who arrived at the scene quickly, inspected the seventy-eighth floor and said: "It was just an oven." Then, in six short words which might well serve as a warning to other communities and other aviators, he summed up the Empire State Building disaster quite simply: "The plane was flying too low."

Shadow of the Crippler

By Charles Johnson

There were two words parents avoided in the summer months of 1946, but the fear of those two words—infantile paralysis—was uppermost in their minds. If a child stayed home complaining of a sore throat, or of the general discomfort which ordinarily went with a cold, the mother put in a hurry-up call for the family doctor and said a silent prayer.

For the summer of 1946 was marked by the severest epidemic of infantile paralysis in thirty years of recorded health history. Not since 1916 were there as many reported cases, nor as many states affected. Never before had the National Foundation for Infantile Paralysis, founded by Franklin D. Roosevelt and supported by the dimes and dollars of millions of Americans, faced so heavy a task in seeing that patients received prompt and adequate care. In one August week, 1,543 new cases of anterior poliomyelitis were reported; an epidemic was on the rampage.

In the spring of 1946, the threat of polio appeared like a tiny shadow on the horizon no larger than a man's thumb, but the shadow grew. By August it had become an ominous cloud over twenty-three states. It was all too apparent that 1946 would break records. And this was the fourth consecutive year of high incidence.

By the week of August 17 the number of reported cases began to decline, yet the final toll for 1946 was 25,191 cases, second only to the 27,363 cases reported in the nation's severest epidemic in 1916.

Hospitals were crowded to the doors. Doctors, nurses,

physical therapists were rushed to epidemic areas. Epidemiologists, those scientific detectives who study outbreaks for clues to the control of the disease, sped to each affected area to collect material for study in their laboratories. Lumbering mechanical respirators and squat hot-pack machines were unloaded from trains, trucks and planes. Men and women gathered in lecture halls of hospitals and medical schools to learn, as quickly as possible, the latest methods of treating the disease. Thousands of volunteers pitched in for the emergency, serving wherever they were needed or could do any good.

Yet, as one went about the country in those warm summer months and the unusually long autumn tapering-off season, there was no evidence of panic. Nowhere were people in a turmoil of fear, as in 1916 when hordes rushed to railroad stations in a vain effort to escape the outbreak, and towns surrounding affected areas posted signs saying: "Keep Out," with armed guards to enforce the message.

Something had happened since the 1916 outbreak took the nation by surprise. Professional men, health authorities, the public, all *knew more* about infantile paralysis. More facilities had sprung up to harbor its victims. The nation was better prepared than ever before to give good care to those who contracted the disease. And the people themselves, inspired by a great President who had had infantile paralysis, had brought into being their own machinery for dealing with epidemics.

Yet the disease struck in unexpected places. In Denver, three infants in a hospital nursery were stricken while confined in extra-sanitary surroundings. One of them had occupied an incubator since birth. A nineteen-year-old mother who accompanied her polio-stricken baby on a mercy flight to the Sister Kenny Institute in Minneapolis learned on her arrival that she had contracted the disease. Five cases were reported in an Illinois trailer camp, and in Alabama three members of one family were admitted to a single hospital with four other cases.

In Georgia, a two-weeks' quarantine was imposed on persons coming into the state from Florida, where numerous cases of the disease had been reported. The health directors of Kansas City, Mo., and Kansas City, Kas., a metropolitan area of more than 500,000 persons, closed all public swimming pools and all city-sponsored teen-age activities as the polio rate rose sharply.

In Minneapolis, hard-hit but remarkably free from panic, high-altitude flying instruments developed during the war by the Army Air Forces were used in treating persons stricken with bulbar polio. The results were heartening. Said Dr. Maurice Visscher, University of Minnesota professor, "The devices proved very useful in control of therapy in respiratory polio cases. Since the application of new techniques in treating bulbar polio, we have had a significant reduction in the mortality rate. We have found that if we can keep bulbar patients breathing five to seven days they have a good chance of surviving."

As polio spread through the Middlewest during early summer, the need for beds, blankets and other regular hospital equipment became serious. Yet eastern states were relatively lightly touched in 1946—and they *had* the equipment, purchased during their own bad years of 1944 and 1945. So a new system of community-sharing came into being.

Early in August, the National Foundation for Infantile Paralysis established an equipment "pool" in Des Moines, Iowa, transportation heart of the affected region. From it, thirty respirators and thirty-nine hot-pack machines from New York, Massachusetts, Virginia and Florida were shipped to affected states on short notice during the remainder of the polio season. Several times, a machine arriving in Des Moines from the East was on its way an hour later in answer to a hospital's S.O.S. Twelve hours later it would be helping a patient to breathe, to live. On one occasion, when the last regular train had departed, a special train was provided by the Chicago, Rock Island & Pacific

Railroad to get respirators to Des Moines without delay.

In Texas, the sale of DDT had increased by 600 per cent in June, as cotton-duster planes sprayed creek beds. Elsewhere entire towns were dusted with DDT. But such efforts, said Prof. C. E. A. Winslow of Yale University, editor of the *American Journal of Public Health*, were a reminder of "the days of yellow fever and the shotgun quarantine of a century ago, when people were driven by blind fear, ignorance and superstition . . . There is no reason to believe that improved methods of sewage treatment and disposal, more rigid standards for purification of water supplies, or the dusting of DDT over a city . . . will have any measurable effect on the incidence of infantile paralysis." The best defense, said Professor Winslow, was to "stick to the simple and well-established concept that polio is principally, if not entirely, spread by direct and intimate contact."

The year 1946 saw a strange development. As the incidence of infantile paralysis mounted, an unusually large number of pregnant women were stricken. One case was recorded in which a woman gave birth to a healthy child while an iron-lung patient. What did this trend mean? The doctors shrugged. It was hard to say.

For years they had fought virtually in the dark. The polio virus was a smaller-than-microscopic organism which passed easily through the finest porcelain lab filter. They were uncertain whether to call it animal, vegetable or mineral. No microscope in existence could pick it out until the electronic "mike" was developed. With the aid of this new tool, they could see the organism's shadow. But even that was only the beginning of the work.

Sometimes the virus turned up in sewage. In one town it was in the milk supply. Sometimes it appeared to enter the system through the respiratory passages. At other times it gained entry to the stomach. In such cases the initial symptoms were different in some respects, consisting of

stomach upset but leading into the inevitable stiffening of the neck, and possibly an eventual spasm.

The virus did its treacherous work in the nervous system, attacking motor nerve centers. This much was known. Other things began to be suspected. It was believed that the disease was highly contagious. It seemed further possible that some persons were immune but might act as carriers. Further, it was suspected that many cases went unreported simply because the attack was too mild to cause unusual discomfort. Typical was the case of a child in a Chicago suburb whose illness was diagnosed and treated as a common cold. Several months later a second physician found that the child had suffered a mild case of infantile paralysis.

One guess about the disease gave doctors cause for anxiety. There could be different strains, suited to different environments and of different strengths. Evidence of this possibility was strong. If true, it meant that an anti-polio serum might not be the solution, for if the organism bred in a selective manner it was capable of developing a species or strain against which the serum would be powerless.

While this possibility taunted men of science, a serum was developed. During the 1946 outbreak, it had yet to be tested, and then, if it proved to be what had so long been sought, it still had to be manufactured.

As polio cases mounted, available funds for treatment were depleted. Benefit concerts, wrestling matches and theater performances were hastily arranged to meet the urgent need.

New methods of therapy, such as the Sister Kenny method of muscle re-education, were used in treatment. A technique of smashing nerves in the contracted limb proved effective; new nerve cells developed as a result. Treatment had progressed considerably, and many of the deformative effects of polio would be averted.

But as the appalling totals for the year grew month by month, one fact remained; as yet there was no way of

preventing the disease. Thousands had died, and many more had been crippled. Others would live, dependent on the iron lung. And there was no saying how or when it would be made to stop. The March of Dimes would continue to raise funds, and the National Foundation for Infantile Paralysis would carry on its campaign for treatment and research.

For parents, each year would begin with new hope as doctors continued looking for the answer. They had learned only too well what Franklin D. Roosevelt meant when he said:

"Those who today are fortunate in being in full possession of their muscular power naturally do not understand what it means to a human being paralyzed by this disease to have that powerlessness lifted, even to a small degree. It means the difference between a human being hopelessly dependent on others—and an individual."

America's Worst Hotel Fire

By Eugene Ray

ATLANTA, GA., December 7, 1946—"I saw so much I can't begin to tell you how horrible it was."

So spoke Fred J. Bowen, Atlanta's assistant fire chief, from a hospital bed to which he was taken, unconscious, after fighting the worst hotel fire in United States history—the burning of the "fireproof" fifteen-story Winecoff Hotel.

It was the third hotel holocaust in a scant six months, but beside it the fires in Chicago's Hotel La Salle (sixty-one dead) and in Dubuque's Canfield Hotel (nineteen dead) paled by comparison. It even surpassed, in horror and loss of life, America's worst previous hotel disaster: the Newhall House fire in Milwaukee, which claimed seventy-one lives in 1883.

The horror started in early morning on December 7, 1946. Before it had ended, 127 of the Winecoff's 285 guests were dead and almost a hundred more injured. Ironically, among the dead was W. Frank Winecoff, who built the hotel in 1913 and continued to live there after selling it in 1937. Like the other Winecoff victims, he paid with his life for the fact that the hotel had no outside fire escapes and no sprinkler system.

About 3:15 in the morning, a girl elevator operator smelled smoke, apparently coming from the fifth floor. She hastily informed the night clerk, Comer Rowan, who was sitting in at the switchboard for his wife. Rowan phoned in the alarm, then frantically started awakening the slumbering guests.

Soon flames and gas were roaring up the two elevator shafts and two narrow stairways to the ventless roof. Then, seeking other outlets, the flames shot down hallways with tremendous force, licking at closed doors as if seeking out their victims.

By 3:50 A.M., when Atlanta's sixty-piece fire department started raising ladders along the Winecoff's walls, the blaze was roaring like an open hearth. Silhouetted by the glow, men and women stood at their windows, screaming and begging to be saved. Several guests crawled out on ledges and waited for firemen to rescue them. Others tied bedsheets together and hung them from the windows. One girl started down an improvised rope toward a ladder. Just a few feet short of safety, the bedsheets broke and she dropped 200 feet to her death.

A woman crashed onto the hotel marquee and landed in a broken heap in the street. A mother tossed her two children out of a seventh-floor window and plunged after them. One man died when he missed a life net by inches. He ripped the coat of one of the net holders in a last desperate effort to save himself.

On the eleventh floor, a woman knelt in a bathroom with her arms around her three young children. They were found, crystallized in that position, like a piece of blackened statuary. Four girls of bobby-sox age lay dead in one room, unburned. They had died of asphyxiation. One man was seen trying to reach a fireman's ladder. He swung down from a rope and hung between the building and the ladder. Two other persons jumped from above, striking him. All three fell to their deaths. A woman jumped from an upper floor and struck a steel cable. Her body hung there over the street.

There were miraculous escapes, too. A husband and wife crawled along the fourteenth-floor cornice from one room to another. There they stacked mattresses against the door and kept them soaked with water from the bathroom. They were rescued.

A woman on the ninth floor was awakened by screams and the acrid smell of heavy smoke. When she opened her door, smoke and flames poured into the room. She slammed the door shut. The bathroom window was the only one she could reach and open. Firemen ran a ladder to the small window and the woman wriggled through to safety.

A four-year-old boy dropped from an upper-story window was caught, uninjured, by a man on the sidewalk.

Maj. Gen. P. W. Baade of Washington, D.C., and his wife were in a sixth-floor room. General Baade, who spent ten months on active duty with the famed Thirty-fifth Division, later said that the Winecoff fire was "worse than anything over there."

"At least you felt you had a chance in dodging bullets. but you're just helpless when you're trapped in a hotel room with roaring flames all around you," he said.

The gray-haired soldier and his wife were awakened about 3:30 A.M. by people screaming for help. The general opened the door to the hall slightly, but quickly saw they had no chance of getting out that way: the corridor was filled with smoke, flames and unbearable heat. He closed and braced the door and, with his wife, went to the window to wait for help. Firemen ran a ladder up to them and brought them down safely.

Less fortunate were the Charles Boschonzes of Cullman, Alabama, who were spending their honeymoon at the Winecoff. "I was on the twelfth floor," the twenty-one-year-old bridegroom related. "Loud clanging woke me up. It must have been about four o'clock. The room was full of smoke and I could see flames outside the window."

Boschonz opened the door, but, blinded by smoke, knew they could not get out. Seeing no other escape, he tied several bedsheets together, slung one end over the radiator, and threw the makeshift rope out the window.

"There was a fire ladder reaching to the tenth floor," he said. "My wife started down the sheets, hand over hand, the way I told her. She got to the eleventh floor, but then

lost her grip and disappeared. I saw her fall. I don't know how I was able to make it, but I did, and the firemen grabbed me."

By now thousands of spectators jammed the streets around the hotel, already littered with dead, and shrieks broke from the crowd as more bodies kept hurtling to the ground.

Many of those who escaped death owed their lives to the heroism of firemen and to volunteers who helped in the rescues. Grover L. Coggins, an Atlanta truckman, reached the hotel at 5:30 A.M. He went through the hotel rooms, pulling men and women to safety.

Hospitals in Atlanta and adjacent areas, including those at Fort McPherson and the Atlanta Naval Air Station, were called upon to supply ambulances, and several hundred nurses and doctors offered their services. Atlanta's Grady Hospital was established as an official clearing center for the dead and injured. The American Red Cross set up emergency headquarters near the hotel, administering first aid to those who might still be saved.

A carload of blood plasma, returned as excess from overseas, was diverted for use among the injured. In addition, a city-wide call was sent out for personal donations of blood for direct transfusions as they might be needed.

The origin of the blaze apparently was buried in the charred wreckage or sealed with the dead. Atlanta's Fire Marshall, Harry Phillips, said that the Winecoff had been inspected not long before the fire and measured up to Fire Department safety requirements. Yet, the fire was out of control within a few minutes after it was discovered. A bellhop testified that he had noticed no fumes or smoke when he delivered some soft drinks to a room on the fifth floor. But when he turned to leave the room he found himself trapped by flames in the doorway.

Firemen fought the blaze for almost six hours before it was extinguished, aided by fire fighters from three suburban towns—East Point, Hopeville and College Park. At

9 A.M., the search began inside the hotel for the bodies of victims, with rescuers working from room to room. Bodies were found sprawled in hallways, and in many rooms which the flames had not reached men and women lay dead. Bleeding from the nose and mouth showed they had been asphyxiated.

At daylight, the sides of the tall, chimney-like Winecoff Hotel were draped with torn bedsheets and blankets, grim reminder to all who passed of Atlanta's night of horror.

Death in Main West

CENTRALIA, ILL., March 25, 1947—At 3:29 P.M. on March 25 the lights blinked out in the Centralia Coal Company's Mine No. 5, near Centralia, Illinois. Wiry, red-headed Earl Wilkinson had just coasted his squat, electric locomotive out of a tunnel, banged to a stop in a low cavern near the mine's elevator shaft. He stiffened, listened intently. He heard no sound. But a wind came out of the subterranean darkness and enveloped him in clouds of coal dust and coppery-smelling smoke.

"God," he said aloud, "it's a bad windy of an explosion." He was using the miner's jargon for a flameless explosion.

Wilkinson ran toward the shaft, finally saw hat lamps glowing in the choking gloom, heard men's voices. Slowly, fumblingly, the men divided up, began feeling their way back down the tunnel. When they reached the entrance to a drift called Main West they knew what had happened. Somewhere, far down Main West's four-mile bore, gas or coal dust had exploded, like powder going off in a gun barrel. And almost all of the mine's 142-man day shift was inside. Retching and staggering, some of the explorers tried to get in. One of them dropped and died before they were forced back. Finally, hardly able to walk, they made it back to the elevator, rode up the shaft, emerged dazedly into the tipple.

The news spread fast. By late afternoon a crowd was gathering at No. 5. It was as though the cast for some vast and somber drama was assembling before curtain time.

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Scores of miners' wives seated themselves numbly on benches in the mine washroom. Rescue crews from towns all around the coal fields—from Belleville, Herrin, Du Quoin, Eldorado, West Frankfort—stood in their hard-toed shoes studying a map of No. 5. Near them were reporters, photographers, state troopers, Red Cross workers, and the drivers of the hearses parked outside.

Shortly after nightfall the first thirty-man crew shouldered the straps of oxygen tanks, pulled on masks and walked like Martians to the big cage elevator. It began its 540-foot descent. After that, every four hours, night and day, a new rescue crew went down. Every four hours a black-faced, exhausted gang came up and terror hung in the tippie as women studied their faces. After a while bodies came up, too, each one on a stretcher, and each covered neatly, but not warmly, by a blanket.

The women sat quietly all day, all night; old women made gross by lives of toil, pale young women with high heels and disordered hair. They stared. Sometimes, with vague and automatic obedience, they drank coffee or ate sandwiches which were offered them. Sometimes a woman would unlock the padlocked chain on which her dead husband's street clothes had been hoisted to the washroom ceiling. She would take the clothes down, fold them, and leave. But the room stayed quiet—so quiet at times that the distant tolling of church bells, the twitter of sparrows in the rafters, could be heard with startling distinctness.

Catholic nuns in black and starched white waited at rough, wooden tables, poured stiff jolts of whisky into paper cups for the grimy, beaten rescue crews. The news from underground was always bad. They found dozens of men killed by the black damp (carbon dioxide) which had rolled out of old side entries opened by the blast. But it was worse farther on. Crews working near the blast had been burned, riddled with flying coal, and squeezed by concussion until their chests caved in and their tongues protruded.

The search ended after four days, three and a half miles in Main West. Fourteen men, the last of No. 5's day shift, lay face down on the tunnel floor. They had not been killed outright. But, being miners, they had known that help would never reach them in time and each had left a note.

One man had scrawled: "It looks like the end for me. I love you honey more than life itself. You are the sweetest wife in the world. Good-bye, Honey and Dickey."

Another note was addressed to two boys: "Be good boys. Please your father. O Lord, help me."

Some had been jotted down at intervals: "I am fine at 5:30. ——— is in bad shape, going on and moaning. Tell ——— I forgive her. Everyone going."

Another read: "My dear wife: Good-bye. Name the baby Joe so you will have a Joe. Love, all. Dad."

In all, 111 men had died. It was the worst mine disaster in the United States since 195 miners had died in an explosion at Mather, Pa., in 1928. To miners and many a plain citizen, it seemed like a senseless tragedy. Mine inspectors had been denouncing Centralia's No. 5 for years—one recent report had listed many dangerous violations of safety codes, but little had ever been done to correct them.

By week's end, the force of the Centralia blast had disturbed both state and national politics. Critics of Illinois' Republican Governor Dwight Green tried to bring him to task for the fact that No. 5 had been allowed to run. In Washington, John L. Lewis seized thunderously on the fact that the Government was still, technically, the operator of mines. He cried that his enemy, Secretary of the Interior J. A. ("Cap") Krug, was a murderer, and called 400,000 U. S. soft-coal miners out for a week's "memorial" holiday.

Tramping ponderously into a crowded congressional caucus room, Lewis spoke of death and terror in the bowels of the earth. When he mentioned the widows and children

of Centralia's dead, his voice sank to a whisper. He cried: "If we must grind up human flesh and bone in the industrial machine . . . then before God I assert that those who consume coal owe them and their families protection . . . I care not who in heaven or hell oppose it . . ." Roaring, whispering or hammering the table, he always swiveled back to his target—Krug.

He spoke for more than five hours. He wanted Krug fired. "Our people," he said, "are tired of working in Krug's slaughterhouse." Krug was guilty of "criminal negligence." He spoke with rumbling irony of Krug, "the Hercules with the size twelve shoe and the size five hat."

Was John L. Lewis himself in any way responsible? He had seldom paid more than lip service to mine safety, and had let damning mine inspection reports go unread in his Washington headquarters. Though he was empowered to demand the closure of unsafe mines, he had never mentioned conditions at Centralia. The thought that he was in any way responsible apparently never crossed John Lewis' mind. Whoever else might be guilty, he was triumphantly, righteously innocent.

Krug remained silent; he suffered Lewis' rawhiding without complaint. Then he ordered 518 government-held mines closed for safety reasons. Lewis bawled with triumph: "This is Krug's deathbed confession. O, God, what a monstrous, grotesque mistake that he is in the position which he occupies."

The sound of all this came faintly to Centralia. Centralia was burying its dead.

Pluperfect Hell at Texas City

TEXAS CITY, TEX., April 16, 1947—The sun shone warm and bright the morning of April 16. It looked like another great day for the war-fat Gulf port town of Texas City, Texas—"The Port of Opportunity." Stores were busy, prosperous people "howdy'd" one another in the streets. Down along the waterfront, \$125,000,000 worth of oil refineries, tin smelters and chemical plants labored mightily to assure Texas City's future. Down there, too, was the only small blot on the day—the French freighter *Grandcamp*, loaded with ammonium nitrate fertilizer and docked some 700 feet from the great Monsanto Chemical Company plant, was afire.

At first only the crew, the longshoremen and the local fire department troubled about the *Grandcamp*. But as the smoke rolled blacker, some 200 people gathered at the dock to watch. By 9:00 A.M., the fire fighters, who knew something about the explosive fury of nitrate, figured they had better move the ship out into Galveston Bay. Twelve minutes later it was too late.

In one tremendous thunderclap, the *Grandcamp* vanished. Hot steel screamed uptown. A flaming wall of oil-covered water rolled over the docks as the blast picked up a steel barge and flung it 100 yards inland. Two light planes that had been circling over the harbor plummeted down together with 300-pound chunks of ship's steel. Then, in a splitting series of explosions (one of which flipped a fire truck on top of the beached barge), the

Courtesy of Time, copyright Time, Inc., 1947.

Monsanto plant and most of the rest of the waterfront blew up.

The next minutes were a vortex of sound, flame and rushing, invisible force. The bodies of the dock crowd, limbs and clothes torn off by the blast, were strewn for half a block. In the ruins of the Monsanto plant, the building sagged slowly down on 800 workers. In adjacent refineries, gasoline and oil tanks shot up like rockets, walls fell, pipes curled up and writhed like snakes, and black and red fire licked greedily over the ground.

Uptown, a mile away, the manager of the White House department store was blown through the post-office door. The invisible force smashed the doors and windows of the First State Bank and scattered money all over the floor. It tossed Mrs. Lena Tide out through a second-story window, twisted the steel roof beams of the auditorium, puffed in the roof and a wall of the Jewel Theater, knocked out the gas, light and water systems and pancaked rows of houses.

A telephone operator flashed neighboring Houston: "For God's sake, send the Red Cross . . ." A dazed young woman walked the streets with a dead child in her arms. Stunned people walked into the sides of buildings and cars, and on the waterfront, these heroic people who always turn up when men are dying, died themselves while following cries from under the flaming wreckage. Trucks loaded with dead rumbled by and sound trucks bellowed warnings through the streets:

The *High Flyer*, a nitrate-laden sister of the *Grand-camp*, was afire and might explode any minute.

The butane tanks were about to blow up and poison gases would be released.

An emergency hospital was set up in the City Hall as the Red Cross, Salvation Army, doctors, nurses, Texas Rangers with pearl-handled revolvers, planeloads of plasma and mobile kitchens began to arrive. The windowless high school gymnasium was swept clean—it would do for a

morgue while the embalmers worked for hours, foot-deep in blood in the McGar garage. Now and again, they turned their backs on the corpses and slugged down hot coffee.

Outside were chaos and the incongruities inseparable from disaster. A terrier bitch whelped beside a dazed crowd at the foot of the memorial to Texas City's World War II dead. A Negro, suffering from concussion after being blown off the dock into the bay, swam back, walked to his blasted home, started patching it with hammer and nails. One man emerged from the rubble of the Texas Terminal Railway Building carrying \$10,000,000 in insurance policies in a bedsheet. He turned them over to the police. After dark, the inevitable looters worked the ruins.

By midnight, some of the people who had fled Texas City began to drift back. Some ignored police warnings that the waterfront was "pluperfect hell" and went down to help. Hundreds of grimy, gas-masked men, stupid with fatigue, still labored there—probing for severed legs, torsos, heads, in the red glow of the unquenchable fire. Sometimes squads of rescuers staggered for cover when a change of wind whipped the blistering heat around. Among them was Father William Roach, of St. Mary's Catholic Church. Father Roach died with his rescue squad when, at 1:11 A. M., the *High Flyer* mushroomed like the Bikini bomb.

The *High Flyer* explosion, which was recorded by a seismograph in Denver, did more than sink a neighboring freighter and rake the remains of Texas City. It stirred a primitive terror. A wild evacuation jammed the roads out of town.

By morning, the people left in Texas City tried to count their dead. There were 200 bodies in the gym. They lay in blanketed rows, each body tagged with a yellow identification slip. The slips were parking tags from the near-by Port Arthur police department, and bore the sentence: "You have violated a traffic law."

The smell of smoke and blood hung thick over relatives bending to look at the tags. Occasionally someone whim-

pered or fainted, or turned woodenly and walked on. One young woman begged to be admitted out of turn to find her young husband. "We only been married a month," she explained. Another in slacks stepped challengingly up to a guard. "He ain't here," she snapped. Still another looked blankly at the face of a corpse, but screamed when she saw its feet. The night before, she had painted her husband's toenails with red fingernail polish.

What had caused the blast? The Coast Guard would say nothing, except that the seamen, who had not been warned of the danger of nitrate cargoes, had been smoking on board the *Grandcamp*.

As for the price, by week's end there were 433 dead, 1,000 injured, 128 missing. Property damage was incalculable, although insurance companies prepared to pay a minimum of \$50,000,000 in claims. The homes, the stores, the restaurants, the movies—whole parking lots full of cars—all were ruined or badly damaged.

In New York, the president of one of the refining companies promptly announced that his firm would rebuild on the same spot, because Texas City was too well located to be killed by a single disaster. But others standing on the football field in the chill evening, at the mass funeral service, were not so sure about Texas City's tomorrows. The false sunset from the waterfront still rouged their set faces. And in the ruined center of the town, the big clock on the Magnolia garage was still stopped dead at 9:13.

Aviation's Blackest Hours

NEW YORK-MARYLAND, May 30-31—The U. S. public, long conditioned to the principle that faster travel means greater danger, had all but forgotten the disastrous airline crashes of the winter of 1946; U. S. airliners were taking off once again with full passenger lists. Then, like spring lightning, disaster struck, again and again. In twenty-four hours of the Memorial Day week-end, 1947, U. S. commercial aviation lived through the blackest hours of its history.

At New York City's LaGuardia Field, forty-two were killed in a take-off accident that ended in flaming death for all but six of the occupants of a United Airlines DC-4. It was the worst airline accident in U. S. history—but there was a worse one before the sun had set again. Next evening, a Florida-bound Eastern Airlines DC-4, stricken by structural failure, plunged out of the sunlit sky into a Maryland bog, and the lives of the fifty-three passengers and crew were snuffed out in the twinkling of an eye.

Above the green woods and fields of Maryland, the sunny, early evening sky was cloudless and clear. From their DC-3, Civil Aeronautics Board inspectors watched Eastern Airlines' Miami-bound plane pass their slower craft and wing majestically down the airway to the south. The CABmen were flying back to Washington from LaGuardia Field after investigating the worst disaster in the history of U. S. civilian aviation. The plane that had just passed was doomed to figure in an even more horrible one.

Courtesy of Time, copyright Time, Inc., 1947.

At 6:45, while the CABmen watched with narrowed eyes, the DC-4 suddenly lurched and headed for the ground, 4,000 feet below. People on the ground heard an ear-shattering roar from its engines. The doomed plane's drunken glide steepened into a dive. From the vertical it went slightly onto its back, completing part of a wide outside loop. The CAB inspectors saw it plunge into a clump of trees, disintegrate in a great cloud of smoke and flying debris.

Eastern's DC-4 had gone down in a woodland between the village of Port Deposit on the Susquehanna River and Perryville on the Pennsylvania Railroad; within a few minutes, automobiles from near-by towns and farms were headed for the spot. Fire equipment and naval enlisted men from near-by Bainbridge Naval Training Station soon joined them.

A vanguard of rescuers plunged through a half mile of brush and swamp, entered a boggy, smoke-filled ravine. Ahead of them lay a clearing, littered with splintered and uprooted trees. The trees were burning, and there were flickering pools of flame on the gasoline-soaked ground. Nothing moved. Torn sections of duraluminum, shards of glass, smoldering seat cushions, broken instruments lay scattered for a hundred yards, but there was nothing to suggest the great machine's shape or purpose. Rags of clothing, women's purses hung with shocking festiveness high in trees. For a hundred feet the ground was littered with charred shoes, letters, broken suitcases and fountain pens.

Scattered through it all were passengers and crew—fifty-three in all. They had perished instantly. Almost every body was charred and broken; arms and legs were strewn about and hung from the trees.

Next day the work of identification began. One corpse clutched a piece of metal in a blackened hand—it was presumed to be that of the plane's captain, William E. Coney of Miami, wartime pilot of the Navy's famed flying boat

Mars and one of the Eastern's best. Two other bodies were easily identified—a headless mother who still pressed her headless child against her breast. But in most cases the only sure identifying clue was to be found in dental work.

As the first white-faced relatives arrived, CAB field inspectors probed in the wreckage, interviewed eyewitnesses and searched the country round about for an explanation of the crash. They soon determined a part of the answer. A quarter of a mile from the crash they found pieces of the plane's tail surfaces. Almost certainly they had been torn off in flight. What had shorn them off? CAB inspectors were not ready to say at once. Many a pilot guessed that a propeller had failed, that a blade had hurtled back and cut into the tail surfaces. This theory had to be discarded when all the DC-4's propeller blades were found in the wreckage. CAB's crash detectives settled down to a longer search for the answer.*

In the earlier disaster at LaGuardia Field on the eve of Memorial Day, a black line-squall loomed in the northwest and lightning flared from cloud to cloud as United Airlines' Cleveland-bound Flight 521—forty-four passengers, four crew—trundled away from the ramp. As he taxied out to the far side of the field, thirty-eight-year-old Captain Benton R. ("Lucky") Baldwin was cleared for take-off. The control tower gave him his choice of two runways—No. 13 or No. 18. He picked the shortest, No. 18; it was only 3,533 feet long but it pointed directly into the brisk, 18 m.p.h. south wind.

It was 8:04 and dusk when he finished his last check of controls and engines. He taxied out to the head of No. 18. The line-squall was moving closer to the field. Baldwin could look into its black heart as he turned his four-engined craft into the wind. The tower gave the go-ahead. Baldwin shoved his throttles open. The big ship began to

* Almost a year later, the Civil Aeronautics Board had not definitely established the reason for the Maryland disaster, but was "pursuing the possibility of a structural failure in the tail assembly."

roll, accelerated, began eating up footage on the blurring runway. It flashed 500, 1,000, 1,500 feet, it got up to a speed of 100 m.p.h. Still it did not get off the ground. Warned of danger by every instinct, Baldwin kept trying to lift his thirty tons of hurtling, streamlined metal. Nothing happened.

As he passed the 2,000-foot mark with his engines turning at full take-off power, he faced one of a pilot's most critical decisions. Should he use the rest of the runway in trying to get off? Or should he obey the classic flying rule that it is safer to plough through a fence on the ground than to push through a bad take-off?

Baldwin chopped his throttles, shoved down on his brakes. But he had only 1,000 feet of pavement left and the 60,319-pound plane kept going. He tried desperately to ground-loop to the left. Instead, the plane would not turn. It plunged straight on, tires screeching, tore down 100 feet of fence at the end of the field, lifted a little and skimmed the earth like a skipped stone.

A motorist on Grand Central Parkway beyond the end of the runway saw it coming and dived for his automobile's floorboards. One of the DC-4's massive, spinning wheels banged across the top of his car, bent it down a full six inches, left him unhurt. The plane lurched on, shearing off light poles, slammed back to earth, slid into a crash of metal, and stopped beside a stagnant pool. Then it burst into flames.

Bleeding and burned, Baldwin managed to open the cockpit escape hatch, dropped to the ground, staggered dazedly away. Rain began streaming down as the flames soared up in fifty-foot tongues. Baldwin started back—there were forty-seven people inside—and was held by the gathering crowd. Firemen drove a fire engine through a wooden fence, attacked the fire. Then the hero of the crash—a thirty-eight-year-old New Yorker named Edward McGrath, arrived. He grabbed an ax, waded into the furnace heat, chopped a hole in the broken plane's duraluminum

skin. He squeezed in and out seven times and hauled out seven people before he collapsed. Then firemen rescued three more.

But, as the distraught and wounded pilot watched, the flames roared higher. For a little while the stunned crowd could hear the screaming of the trapped men and women as they pounded against the sides of the fuselage. Then the metal glowed white-hot and the sounds stopped. When the plane finally cooled, thirty-seven charred bodies lay inside. Five other passengers died later, brought the total dead to forty-two.

Meanwhile, United Airlines got busy with a statement for the press. The accident, it said, was due to a "freak gust" in a wind shift that occurred with "unbelievable suddenness." Actually there was nothing very freakish about the sudden shift that put the wind on Pilot Baldwin's tail and thus prolonged his take-off run. Sudden wind shifts often occur in front of thunderstorms.

The basic explanation was that Runway 18, only 3,533 feet long, was too short for the take-off of any modern airliner except under ideal circumstances, *e.g.*, a steady head wind of around 35 m.p.h. Because it was short, it robbed Pilot Baldwin of any chance to save his plane from disaster. Runway 18 has been often used, by many airlines; the law of averages was certain, sooner or later, to catch up with one of their pilots.

SUPPLEMENTARY LIST OF AMERICAN DISASTERS

PLAGUES AND EPIDEMICS

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| 1618-23 | Pestilence kills thousands of Indians, sparing only 30 of a Massachusetts tribe of 30,000. |
| 1832 | Cholera epidemic crosses Atlantic and sweeps Mohawk Valley, killing thousands in Albany, Syracuse, Rochester, Utica, Lenox and New York City. |
| 1853-4-5 | Yellow fever epidemic in New Orleans, La., kills at least 5,000. |
| 1866 | Cholera strikes at major U. S. cities. Toll in St. Louis, Mo., alone reaches 200 a day at peak of outbreak. |
| 1878 | Yellow fever breaks out again in New Orleans, claims 4,000 lives. |
| 1943 | Infantile paralysis epidemic throughout U. S. kills 1,151 and cripples thousands. |

NATURAL DISASTERS

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| 1856, Aug. 10 | Waves whipped by cyclonic winds drown 400 attending ball at Last Island, La., a gulf resort in the mouth of the Mississippi River. |
| 1875, Sept. 15-18 | Hurricane centering around Galveston, Tex., sweeps away entire villages, causing heavy loss of life. |
| 1884, Feb. 9 | Tornado, extending from Illinois to Gulf of Mexico, rips through southern states, kills 700. |
| 1886, Oct. 12 | Violent gales cause floods resulting in 250 deaths on Texas gulf coast. |

1889, June 12	Tornado kills 119 and injures 146 at New Richmond, Wis.
1890, March 27	Tornado kills 125 at Louisville, Ky.
1912, April-May	Mississippi River and tributaries overflow, causing 200 deaths and \$45,000,000 property damage in Mississippi Valley.
1913, March 25-27	Floods of Ohio and Indiana rivers take 730 lives, cause \$180,000,000 property damage; Dayton, Ohio, nearly destroyed.
1915, Aug. 16	Texas coastal area hit by hurricane which claims 375 lives.
1915, Sept. 29	Hurricane, centering around New Orleans, La., kills 500.
1925, March 18	Eight hundred killed, 13,000 injured when tornado sweeps across Illinois, Indiana, Tennessee, Kentucky and Missouri.
1926, Sept. 18	Hurricane hits Florida's east coast, killing 373, leaving 40,000 homeless and causing \$165,000,000 property damage.
1928, March 13	Dam bursts at St. Francis, Calif.; 450 killed.
1933, March 10	One hundred and twenty persons killed in earthquake at Long Beach, Calif.
1935, Sept. 1	Hurricane in Florida Keys takes 500 lives.
1936, April 2	Tornado centering around Tupelo, Miss., and Gainesville, Ga., sweeps southern states, killing 402, injuring 1,853.
1937, Jan. 22	Disastrous floods in Mississippi, Allegheny and Ohio valleys cause deaths estimated at 900.
1937, Aug. 11	Nineteen killed when heavy rains cause collapse of buildings at New Brighton, Staten Island, N.Y.
1938, March 2	Flood and landslides in Los Angeles, Calif., and 100 other southern California communities cause almost 200 deaths;

- 20,000 left homeless, property damage estimated at \$60,000,000.
- 1938, March 30 Tornado hits Arkansas, Oklahoma, Kansas, Missouri and Illinois, killing 36.
- 1938, Sept. 29 Thirty-one killed, more than 200 injured in tornado at Charleston, S.C.
- 1939, April 15-16 Tornadoes kill at least 40 in Texas, Louisiana, Arkansas and Oklahoma.
- 1939, July 5 At least 75 drown in flash floods from swollen mountain streams in northeastern Kentucky.
- 1940, Nov. 11 Blizzard from Canada, accompanied by high winds and low temperatures, sweeps over Middle West, Rocky Mountain states and south to Louisiana, killing more than 100.
- 1941, March 16 Blizzard sweeping along at 85 miles an hour kills 60 in North Dakota and Minnesota.
- 1941, Oct. 26 Two tornadoes, six hours apart, kill 17 and injure scores in Arkansas.
- 1942, March 15-16 Tornado kills 136 in Mississippi, Alabama, Tennessee, Kentucky, Indiana and Illinois.
- 1942, April 27 Nearly 100 killed, 300 injured, when tornado hits Pryor, Okla.
- 1944, April 16 At least 38 killed and 500 injured when tornado sweeps through 100-mile belt in southeast Georgia and western South Carolina.
- 1944, June 23 Tornado in parts of Pennsylvania, West Virginia and Maryland kills at least 145, injures hundreds.
- 1945, Feb. 12 At least 43 killed, hundreds injured by tornado that sweeps across parts of Mississippi and Alabama.
- 1945, April 12 More than 100 killed in tornado in Oklahoma, Arkansas and Missouri.

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| 1945, Nov. 30 | Thirty-four killed by heavy gales and blizzards sweeping over New England, New York and New Jersey. |
| 1946, Jan. 4 | Thirty-three killed by tornado in eastern Texas. |
| 1946, Nov. 15 | At least 18 die in two-week period of snowstorms that paralyze vast part of Colorado. |
| 1947, April 9 | At least 138 killed and 1,305 injured by tornado in western Texas and Oklahoma; 70 per cent of town of Woodward, Okla., destroyed. |
| 1947, April 29 | Freak windstorm razes every building on Main Street in Worth, Mo., killing 14 and injuring 25. |
| 1947, June 1 | Twenty-eight killed, scores injured by tornado near Pine Bluff, Ark. |
| 1947, June 7-8 | Twenty drown in floodwaters of Des Moines River at Ottumwa, Iowa. |
| 1947, July 5 | Floods in Missouri and upper Mississippi valleys bring death to 16, leave 34,812 homeless and cause property damage estimated at \$850,000,000. |
| 1947, Sept. 17-19 | Eighty-four dead and missing in violent hurricane that cuts through southern Florida and strikes Louisiana and Mississippi. |
| 1947, Sept. 21 | Hurricane and flood kill 72 in and around New Orleans, La. |
| 1947, Dec. 26 | Greatest snowfall in recorded history of New York City—more than 25 inches—paralyzes traffic, buries city under 99,000,000 tons of snow and brings death to 55 in eight North Atlantic states. |
| 1948, May-June | Forty-six known dead, scores missing, property damage estimated at more than \$75,000,000 when Columbia River and its tributaries flood vast areas in Ore- |

gon, Washington, British Columbia, Idaho and Montana. Entire war-built town of Vanport, Ore. destroyed.

FIRES AND EXPLOSIONS

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| 1788, March 21 | Fire razes 856 buildings, New Orleans, La. |
| 1811, Dec. 26 | Seventy-two killed in panic when South Theater in Richmond, Va., burns. |
| 1835, Dec. 16 | More than 500 buildings in 52-acre area of New York City burn, with loss estimated at \$15,000,000. |
| 1845, April 10 | Thousand buildings destroyed, damage estimated at \$3,500,000, in Pittsburgh, Pa. |
| 1849, May 17 | Fire destroys 425 buildings, 27 steamships in St. Louis, Mo. |
| 1851, May 3-5 | Fire in San Francisco, Calif., destroys 2,500 buildings. |
| 1866, July 4-5 | Ten-million-dollar fire at Portland, Me., destroys 1,500 buildings. |
| 1869, Sept. 6 | Mine explosion at Plymouth, Pa., kills 179. |
| 1872, Nov. 9-11 | Thirteen killed in \$75,000,000 fire in Boston, Mass. |
| 1876, Dec. 5 | Brooklyn Theater, in Brooklyn, N.Y., burns during performance, killing 283. |
| 1881, Aug. 31-Sept. 6 | Michigan forest fires, centering around Lake Huron and Saginaw Bay, kill 138. |
| 1883, Jan. 10 | Seventy-one lives lost when fire razes Newhall House, Milwaukee, Wisc., hotel. |
| 1883, March 18 | Fifty-eight killed and nearly 100 injured in circus fire and panic, New Orleans, La. |
| 1884, March 13 | One hundred and twelve miners killed in explosion at Pocohontas, Va. |
| 1891, Jan. 27 | One hundred and nine men killed in mine explosion at Mount Pleasant, Pa. |
| 1895, Dec. 27 | Minor gas fire in Baltimore, Md., causes panic in which 22 are killed, 45 injured. |

1900, May 1	Two hundred miners killed in explosion at Scofield, Utah.
1900, June 30	Steamships and piers at Hoboken, N. J., burn, killing 326.
1901, May 3	Fire in Jacksonville, Fla., destroys 1,700 buildings; loss placed at \$11,000,000.
1902, May 19	Mine explosion at Coal Creek, Tenn., kills 184.
1902, July 10	Explosion in coal mine at Johnstown, Pa., kills 112.
1903, Jan. 12	Rhodes Opera House in Boyertown, Pa., burns, killing 170.
1903, June 20	Coal mine explosion at Hanna, Wyo., claims 169 lives.
1904, Jan. 25	One hundred and seventy-nine killed in coal mine explosion at Cheswick, Pa.
1904, Feb. 7-8	Fire in Baltimore, Md., destroys 80 blocks in business district, causes \$50,000,000 damage.
1905, Feb. 20	Mine explosion at Virginia City, Ala., kills 108.
1907, Dec. 6	Explosion at Monongah, W. Va., kills 361 men in one of worst coal-mine disasters in U.S. history.
1907, Dec. 19	Another disastrous coal-mine explosion at Jacobs Creek, Pa., claims 239 lives.
1908, March 8	Lakeview School burns in Collinwood, Ohio; 174 pupils and teachers die.
1908, Nov. 28	Marianna, Pa., coal-mine explosion kills 154.
1911, April 8	One hundred and twenty-eight men die in mine explosion at Littleton, Ala.
1913, Oct. 22	Mine blast at Dawson, N.M., kills 263.
1914, April 28	One hundred and eighty-one men killed in coal-mine explosion at Eccles, W. Va.
1914, June 25	Six killed in Salem, Mass., in fire which

	destroys 1,600 buildings and causes \$14,-000,000 damage.
1916, March 21	Fire destroys 1,440 buildings in Paris, Tex., causing damage estimated at \$11,-000,000.
1917, April 27	One hundred and twenty-one killed in mine explosion at Hastings, Colo.
1918, Oct. 12	Minnesota forest fires kill 400, cause \$30,-000,000 damage.
1922, Dec. 8	Thirty business blocks burns in \$10,000,-000 fire in Astoria, Ore.
1923, Feb. 8	One hundred and twenty men killed in coal-mine explosion at Dawson City, N.M.
1924, March 8	Coal-mine disaster at Castle Gate, Utah, claims 171 lives.
1924, April 28	One hundred and nineteen men die in mine explosion at Benwood, W. Va.
1926, July 10	Arsenal explosion at Lake Denmark, N.J., kills 21 and causes \$75,000,000 property damage.
1928, May 19	Coal-mine disaster at Mather, Pa., kills 195.
1929, May 15	Hospital clinic in Cleveland, Ohio, burns; 125 asphyxiated.
1936, Sept. 26	Oregon forest fires kill 13, destroy 386 buildings.
1937, Aug. 22	Fourteen killed, 50 injured in forest fire at Cody, Wyo.
1938, May 16	Thirty-four killed when fire destroys Terminal Hotel in Atlanta, Ga.
1939, May 11	Nine killed, five grain elevators destroyed in Chicago, Ill., fire.
1940, Jan. 3	Nineteen killed when fire destroys Marlborough apartment hotel in Minneapolis, Minn.

1940, March 16	Seventy-five killed in explosion in Willow Grove coal mine at St. Clairsville, Ohio.
1940, April 23	Fire destroys Negro dance hall at Natchez, Miss.; 198 burned to death.
1940, July 15	Explosion in coal mine at Sonman, Pa., kills 63.
1940, July 30	Ten killed in fire which destroys factory and 32 dwellings in Camden, N.J.
1940, Sept. 12	Forty-nine killed, 200 injured in explosion at Hercules Powder Co. plant in Kenil, N.J.
1941, Aug. 18	Thirty-one die in fire that starts on Brooklyn (N.Y.) pier and wrecks freighter <i>Panuco</i> .
1942, Jan. 28	Thirty-four miners killed in explosion at coal mine at Mount Harris, Colo.
1942, March 26	Premature explosion of 21 tons of gelatinite in quarry at Easton, Pa., kills 31.
1942, May 12	Forty-five killed by explosion in coal mine at Osage, W. Va.
1942, June 5	Explosion in Elwood Ordnance plant near Joliet, Ill., results in 54 dead, 41 injured.
1943, Jan. 31	Twenty-eight patients burn to death in fire that sweeps through sanatorium for aged invalids near Seattle, Wash.
1943, Aug. 28	Nineteen killed, 25 injured when two gas explosions seal coal-mine tunnel at Birmingham, Ala.
1943, Sept. 7	Forty-five die when fire sweeps old hotel in midtown section of Houston, Tex.
1943, Sept. 17	Twenty-four killed, 250 injured when "ammunition in transit" at Norfolk (Va.) naval air station blows up.
1943, Dec. 24	At least 17 burn to death when fire razes dilapidated lodging house in New York City.

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| 1944, March 25 | Sixteen killed in blast as they attempt to put out fire in coal mine at Shinnston, W. Va. |
| 1944, July 17 | At least 321 killed and hundreds injured in explosion of two munition ships at Port Chicago, Calif. |
| 1944, Oct. 20 | One hundred and twenty-one killed, 300 dwellings destroyed, and \$10,000,000 damage done by fire started when huge gas tank explodes at Cleveland, Ohio. |
| 1945, Jan. 31 | Sixteen children and one adult die when fire destroys nursery for children of war workers at Auburn, Me. |
| 1945, Dec. 25 | Eighteen die when short circuit starts Christmas-tree fire in hospital at Hartford, Conn. |
| 1946, June 5 | Sixty-one die from flames or suffocation when fire sweeps La Salle Hotel in Chicago, Ill. |
| 1946, June 9 | Nineteen killed, 22 injured when Canfield Hotel burns in Dubuque, Iowa. |
| 1946, Dec. 12 | Collapse of huge wall of New York City ice plant shears off half of neighboring tenement, entombing 38 of its residents. |
| 1947, Feb. 20 | Fifteen killed and 100 injured when explosion razes electroplating plant and damages near-by buildings in Los Angeles, Calif. |
| 1947, July 29 | Ten women killed, 30 injured when blast wrecks beauty shop in Harrisonburg, Va. |
| 1947, Oct. 24 | At least 17 persons die when forest fires sweep through New England, particularly Maine, destroying large part of Bar Harbor and causing damage estimated at \$30,000,000. |
| 1947, Dec. 1 | Fourteen men killed in fire that destroys four-story building in Philadelphia, Pa. |

- 1948, May 18 Ten killed in fire and explosion at tar and chemical plant in Kearny, N.J.

AVIATION

- 1919, July 21 Thirteen killed, many injured when 158-foot dirigible balloon crashes through sky-light of bank in Chicago, Ill.
- 1925, Sept. 3 Fourteen of crew of 43 die when *Shenandoah*, first American-built rigid airship, breaks in two and crashes in Caldwell, Ohio.
- 1933, April 4 The *Akron*, U. S. Navy lighter-than-air ship, sinks in the Atlantic, carrying 73 officers and men to their death.
- 1936, Jan. 1 Seventeen die in crash of airliner at Goodwin, Ark.
- 1937, Oct. 17 Nineteen killed in plane crash at Chalk Mountain, Wyo.
- 1940, Aug. 31 All 25 aboard commercial airliner killed when plane crashes at Lovettsville, Va.
- 1941, Feb. 27 Seven killed, 9 injured in crash of passenger airliner near Atlanta, Ga.
- 1941, Oct. 30 Fourteen die when airliner crashes in fog near Fargo (N.D.) airport; pilot is only survivor.
- 1942, Jan. 16 Twenty-two killed in crash of transport plane on Table Rock Mountain near Las Vegas, Nev.
- 1942, May 1 Seventeen die when passenger plane crashes into Ensign Peak near Salt Lake City, Utah.
- 1942, Sept. 11 Twelve workers killed, 35 injured when flaming plane whose pilot had bailed out nose-dives through Curtiss-Wright plane factory in East Buffalo, N.Y.
- 1942, Dec. 15 Seventeen of 19 aboard killed when plane crashes in desert near Fairfield, Utah.

1943, Feb. 18	Thirty-four killed when bomber crashes into packing plant near Seattle, Wash.
1943, May 20	Twelve killed when Army bomber crashes into gas storage tanks at Chicago, setting fire to 18,000,000 cubic feet of gas.
1943, July 28	Twenty burned to death when airliner explodes near Bowling Green, Ky.
1944, Feb. 10	Twenty-four killed in crash of commercial transport plane into Mississippi River 19 miles below Memphis, Tenn.
1945, Jan. 10	Passenger plane crashes in fog at Los Angeles, Calif., killing all 24 persons aboard.
1945, Feb. 23	Seventeen killed, 5 injured when commercial airliner crashes into mountainside near Cedar Springs, Va.
1945, April 14	All 20 persons aboard killed when airliner crashes into Chestnut Ridge, 12 miles east of Morgantown, W. Va.
1945, Sept. 7	Commercial airliner plunges into deep swamp near Florence, S.C., killing all 22 persons aboard.
1945, Nov. 8	Collision of two Navy planes brings death to 22 crew members at Corpus Christi, Tex.
1945, Dec. 8	Nineteen of 23 aboard transport plane killed when craft crash-lands in snowstorm in Billings, Mont.
1946, March 3	All 27 persons aboard New York-Los Angeles airliner killed when plane crashes into fog-shrouded mountain 60 miles east of San Diego, Calif.
1946, March 19	Army transport crashes in snowstorm near Truckee, Calif., killing all 26 occupants.
1946, May 10	Two Navy planes crash in wooded area near Munson, Fla., killing 28 fliers.
1946, May 26	Twenty-five passengers and crew of 2

- killed when airliner crashes six miles from Richmond, Va.
- 1946, July 9 Twenty-five killed in crash of converted B-17 Flying Fortress at Mt. Tom, Mass.
- 1947, Jan. 12 Passenger airliner flying from Detroit to Miami bursts into flames after crashing near Galax, Va., during storm; 18 killed.
- 1947, June 13 Fifty die when airliner crashes into mountain near Charlestown, W. Va., and explodes.
- 1947, July 13 Twenty-one killed in crash of DC-3 airliner in coastal swamp near Melbourne, Fla.
- 1947, Oct. 24 All 52 persons aboard passenger airliner killed when craft crashes into hillside at Bryce Canyon, Utah.
- 1947, Dec. 11 All 20 persons aboard Army C-47 killed when plane crashes on wooded hillside near Memphis, Tenn.
- 1948, Jan. 28 Thirty-two persons, including 28 Mexican deportees, killed when chartered Immigration Service plane crashes near Coalinga, Calif.
- 1948, June 17 All 43 aboard California-to-New York DC-6 are killed when airliner crashes into power line, explodes and burns near Mt. Carmel, Pa.

RAILROAD

- 1853, May 6 Forty-four killed, 25 injured when train goes through open drawbridge at Norwalk, Conn.
- 1864, July 15 Sixty-five killed, 109 injured when passenger train carrying 833 Confederate prisoners and 125 guards collides with coal train near Shohola, Pa.
- 1867, Dec. 19 Forty-nine killed, 40 injured when two

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| | rear cars of passenger train plunge off bridge at Angola, N.Y., and burn. |
| 1871, Aug. 26 | Twenty-nine killed, 57 injured when <i>Portland Express</i> plows into stalled train near Revere, Mass. |
| 1907, Sept. 15 | Twenty-five killed when freight and passenger train collide in fog near West Canaan, N.H. |
| 1910, March 1 | Ninety-six killed when avalanche hurls two trains 300 feet into canyon at Wellington, Wash. |
| 1918, July 9 | Ninety-nine killed, 171 injured in collision of two trains at Nashville, Tenn. |
| 1936, Nov. 24 | Ten killed, 59 injured when suburban train using elevated tracks plows into rear of elevated train in Chicago. |
| 1937, June 19 | Forty-seven killed, 65 injured when bridge over flooded Custer Creek at Miles City, Mont., collapses under <i>Olympian</i> , de luxe passenger train. |
| 1939, Aug. 12 | Streamliner <i>City of San Francisco</i> wrecked near Elko, Nev.; 24 killed, 113 injured. |
| 1940, April 19 | <i>Lake Shore Limited</i> runs off track at Little Falls, N.Y., while rounding curve at high speed; 31 killed, 60 injured. |
| 1940, July 31 | Suburban passenger car collides head-on with freight at Cuyahoga Falls, Ohio; 43 killed. |
| 1943, May 23 | Fourteen killed, 100 injured when passenger train crowded with week-end tourists jumps track near Delair, N.J. |
| 1943, Aug. 30 | Twenty-seven killed when freight train crashes into locomotive of crack express at Wayland, N.Y. |
| 1944, July 6 | Thirty-three killed, more than 100 injured when locomotive and 2 sleepers of |

- troop train plunge 50 feet into Clear River gorge at Jellico, Tenn.
- 1944, Sept. 14 Head-on collision of two passenger trains at Terre Haute, Ind., kills 26, injures 65.
- 1944, Dec. 31 Forty-eight killed, scores injured when second section of limited train telescopes into rear cars of first section near Ogden, Utah.
- 1945, June 15 Twenty killed, 32 injured when express train jumps tracks at Milton, Pa., plowing into freight.
- 1946, April 25 Forty-six killed, 100 injured when second section of express train going 75 miles per hour plows into first section at Naperville, Ill.
- 1946, Dec. 13 Eighteen killed in three-way crash of passenger and 2 freight trains near Mansfield, Ohio.
- 1947, Feb. 18 Twenty-three killed, 124 injured when fast train goes over 150-foot embankment near Altoona, Pa.
- 1948, Jan. 1 Fourteen persons killed when second section of *Missourian*, crack express train, rams first section in blinding snowstorm near Otterville, Mo.

MOTOR TRANSPORT

- 1937, Jan. 25 Florida motorbus from Miami to Tampa, Fla., overturns in canal; 13 drowned.
- 1937, March 24 Motorbus bursts tire near Salem, Ill.; 18 killed, 5 injured.
- 1937, Oct. 22 Streamlined train hits school bus at Mason City, Ia.; 9 killed, 21 injured.
- 1938, Dec. 1 Twenty-three children and driver of school bus killed in collision with train near Salt Lake City, Utah.
- 1940, March 14 Twenty-seven killed, 15 injured when

- passenger train hits truck loaded with fruit pickers at McAllen, Tex.
- 1942, Oct. 28 Sixteen killed, 20 injured when speeding passenger train crashes into motorbus carrying school children and factory workers at grade crossing in Detroit, Mich.
- 1942, Dec. 22 Twenty-two killed when avalanche at Aliquippa, Pa., buries motorbus loaded with defense workers.
- 1944, Jan. 6 Twenty-seven die in collision of bus and freight train at Kingman, Ariz.
- 1944, March 20 Sixteen killed when passenger bus hurtles over bridge and plunges into Passaic River at Passaic, N.J.
- 1945, Nov. 26 Fourteen school children and bus driver drown when school bus dives over 50-foot embankment into Lake Chelan, Wash., during snowstorm.
- 1946, Dec. 18 Ten school children and driver killed when school bus collides with train in fog near Newberry, S.C.

MARINE

- 1836, Nov. 21 The *Bristol*, bound from England to New York, wrecked off Far Rockaway, N.Y.; 77 die.
- 1837, May 9 Steam packet *Ben Sherrod* burns on Mississippi River below Natchez, Miss.; 175 die.
- 1837, Oct. 9 One hundred lives lost when steamboat *Home*, bound from New York City to Charleston, S.C., is wrecked off Ocrakoke, N.C.
- 1837, Oct. 29 Steamer *Monmouth* sinks in collision on Mississippi River; 234 die.
- 1838, April 25 One hundred die when steamboat *Moselle*

- blows up on Ohio River, near Cincinnati, Ohio.
- 1838, June 14 One hundred and forty killed when steamboat *Pulaski* blows up off North Carolina.
- 1840, Jan. 13 Steamboat *Lexington* burns off Eaton's Neck, N.Y.; 140 die.
- 1841, Aug. 9 One hundred and seventy-five killed when steamer *Erie* burns on Lake Erie.
- 1847, Nov. 19 One hundred die when steamers *Talisman* and *Tempest* collide on Ohio River.
- 1848, Aug. 24 Two hundred killed when American emigrant ship *Ocean Monarch* burns off Carnarvonshire, North Wales.
- 1849, Oct. 7 Brig *St. John* lost off Cohasset, Mass., with 143 passengers and crew.
- 1850, June 17 Steamer *Griffith* burns on Lake Erie; 300 die.
- 1852, Aug. 20 Steamer *Atlantic* sinks in collision on Lake Erie; 250 lost.
- 1853, Feb. 16 The *Independence* burns off coast of lower California; 140 die.
- 1853, Dec. 24 Two hundred and forty die when steamer *San Francisco*, bound for California with 700 passengers, founders at sea.
- 1854, Nov. 13 More than 300 die when American-owned emigrant ship *New Era*, bound from Bremen for New York City, is wrecked on New Jersey coast, 15 miles below Sandy Hook.
- 1858, June 13 One hundred and sixty killed when steamboat *Pennsylvania* explodes on Mississippi River near Memphis, Tenn.
- 1859, April 27 Four hundred die when American ship *Pomona*, bound from Liverpool to New York City, is wrecked.
- 1866, Jan. 30 One hundred killed when boilers explode on steamer *Missouri* on Ohio River.

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| 1866, Jan. 30 | Steamer <i>Miami's</i> boilers explode on Mississippi River; 150 die. |
| 1866, Oct. 3 | Two hundred and fifty die when steamer <i>Evening Star</i> , bound from New York City to New Orleans, La., founders. |
| 1868, April 9 | Steamer <i>Sea Bird</i> burns on Lake Michigan; 100 die. |
| 1869, Oct. 27 | Two hundred die as Steamer <i>Stonewall</i> burns below Cairo, Ill. |
| 1870, Jan. 24 | American ship <i>Oneida</i> sinks in collision off Yokohama; 115 drown. |
| 1870, Jan. 28 | Steamer <i>City of Boston</i> , bound from New York City to Liverpool, vanishes at sea with 177 aboard. |
| 1871, July 30 | One hundred die when boilers explode on <i>Westfield</i> , Staten Island ferryboat, in New York Harbor. |
| 1875, Nov. 4 | American steamer <i>Pacific</i> sinks in collision off Cape Flattery; 236 drown. |
| 1878, Jan. 31 | One hundred die in wreck of steamer <i>Metropolis</i> off North Carolina. |
| 1879, Feb. 12-16 | Thirteen American fishing schooners founder off George's Banks, Newfoundland; 144 die. |
| 1884, April 18 | One hundred and fifty drown when bark <i>Pomona</i> collides with steamer <i>State of Florida</i> off coast of Ireland and both vessels founder. |
| 1898, Nov. 26 | Sidewheel steamer <i>Portland</i> sinks in open sea off Cape Cod, Mass.; all passengers and entire crew, estimated at 200, lost. |
| 1907, Feb. 12 | One hundred and thirty-one drown when steamer <i>Larchmont</i> sinks in Long Island Sound, N.Y. |
| 1907, July 20 | One hundred die when American steamers <i>Columbia</i> and <i>San Petro</i> collide off California coast. |

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| 1928, Nov. 12 | British steamer <i>Vestris</i> , bound from New York City for South America, sinks in gale off Virginia Capes; 111 drown. |
| 1941, June 20 | Crew of 33 lost when U.S. Navy submarine O-9 fails to come up after test dive near Portsmouth, N.H. |
| 1942, Dec. 2 | Thirty-four lost when tug and oil tanker barge sink in Lake Erie, off Cleveland, Ohio. |
| 1943, June 6 | Eighty-four men killed in explosion after collision of ammunition ship and oil tanker off east coast of U.S. near Norfolk, Va. |
| 1943, Oct. 20 | Eighty-eight men die when two blacked-out tankers collide and explode off Florida coast. |
| 1945, April 12 | Forty-nine die when U.S. Navy patrol ship explodes off Cape Elizabeth, Me. |
| 1947, Sept. 9 | Nineteen killed when explosion sets fire to excursion steamer <i>Island Queen</i> at Pittsburgh, Pa. |

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